NEW REMEDIES.

AN ILLUSTRATED MONTHLY TRADE JOURNAL OF MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

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EDITORIAL.

A NUMBER of persons concerned in the wholesale drug trade have lately undertaken to establish here a weekly trade-sale of their wares, similar to those which have long been held in London, and the first trial was made on the 12th inst. Either through a mistaken impression of the nature of the transaction, or because insufficient notice was given of the sale, the affair came far short of being either a success or meeting with the support to which it is entitled. There is as much reason for facilitating an intimate exchange between the buyers and producers of drugs and chemicals as there is in the case of cotton, tobacco, grain, stocks, or books, all of which special interests have trade-sales at stated intervals, which result in mutual benefit. In the instance at present referred to, many of the persons in attendance appear to have had an impression that the sale was in the nature of an auction, at which goods were likely to be sold at a sacrifice. As it was, only a bale or two of orange-peel were disposed of, and the remainder of the goods was withdrawn. We hope that before the time for the next sale arrives, greater pains will be taken by its supporters to give its true character publicity, and that they will not be discouraged by their first experience.

The opportunity offered by a weekly trade-sale for becoming familiar with the goods in the market, and the slight shading of price which would naturally result from such a ready mode of exchanging values, should be sufficient attractions for the careful buyer, and are not to be despised while the present depression in the drug trade continues.

DR. FULLER'S method of subdividing remedies (see page 69) so as to enable them to be administered in an agreeable form, and in uniform and adjustable strength, with the least expenditure of labor, appears to be a step in advance of previously-known pharmaceutical methods, and, like some other inventions of practical utility, surprises us by its simplicity, and makes us wonder why it was not suggested long ago. In accuracy of dosage both the medicated tablet and the saturated tablet and pill appear to be sufficiently exact. The labor required is rather less than what is necessary in the making of most pills, and both methods produce attractive results, which is by no means the least of their advantages.

Homœopathic physicians have always had a greater hold on the public through the agreeable forms adopted by them for administering their drugs than because of any intelligent appreciation the latter may have had of the homœopathic theory of cure, but such facility of dosage has been attained at the expense of knowledge regarding the quantity of the agent being used. A recognition of this fact has perhaps as much to do with the disinclination of most physicians to adopt homœopathic methods of pharmacy as any other reason, since, however agreeable sugar of milk and pellets may be to a patient, a careful and conscientious practitioner is far more likely to rate this feature of medication inferior to a definite understanding in regard to the nature of his remedy, even at the expense of sacrificing, in some degree, the immediate comfort of his patient to secure ultimate advantages.

So far as we are able to judge from examination of Dr. Fuller's specimens, and from seeing his processes of manipulation, there is now little reason why they may not prove to be among the most successful of the methods yet proposed for the accurate subdivision of doses.

Certain it is that Dr. Fuller is entitled to great credit for the persistency with which he has worked out the problem, and overcome its difficulties.

THE hospital stewards of the United States Army are petitioning Congress for a change in the law which will allow them to hold a rank equal, at least, to that of any non-commissioned officer; a pay of $50 per month, for stewards of

the highest grade, with $5 per month for each five years of additional service, and eligibility for promotion into the Medical Staff on the proof of fitness by examination. In order that candidates may acquire the training needed for such promotion, it is asked that, at intervals of three years, leave of absence, with pay, be granted to one steward to enable him to attend a course of medical lectures.

There is nothing in the petition which is not reasonable and which should not be granted. The measure has the indorsement of the Medical Staff, and in view of the slightly increased expense involved, and the eminently worthy character of the men for whose benefit it is asked, we hope that the bill in favor of it will become a law.

Compared with the nature of the service rendered, there is no department of the service so poorly paid, or whose intelligent labors finds so little general appreciation as that of the corps of hospital stewards; yet there is room for greater efficiency of a sort that would follow an *esprit du corps* which the graded rank and possibilities of promotion would bring about. The course of the present Congress does not inspire us with much confidence that anything so obviously just will meet its approval; still we hope.

In many Southern States a local tax, usually $100 per annum, is imposed on all travelling agents. This is probably not so much for the purpose of raising a revenue, as to confine trade to home dealers, by excluding from the cities the agents of Northern and Western houses, who sell goods by sample or simply exhibit wares, leaving the buyer to order in person from the manufacturer or importer. The usual arguments employed to justify a protective tariff could be applied to this case if manufacturing industries were thereby encouraged, but even the most ardent advocate of a national tariff for "protection" does not justify an impost for the advantage of the "middle man" or dealer, and our Southern friends will find in the end that they are suffering far more than being benefited by the collection of such a tax.

An instance recently came to our notice of the travelling agent of a manufacturer of cinchona alkaloids having been arrested in Richmond, Va., and fined for doing business without such a license. Now, surely, the manufacture of quinia in Virginia needs no such protection from outside competition, and the only result such legislation can accomplish may be illustrated by the following extract from the *Times* (New York):

"The Mobile (Ala.) *Register* earnestly calls for the revocation of the local tax on commercial travellers, saying that in order to collect perhaps $500, the city drives away a trade which leaves $200,000 there annually, and saves the merchants from spending $200,000 more in Northern cities."

It requires but little mathematical calculation to show that a man who goes in person to an importer or manufacturer for his supplies, and must add the expense of the trip to the cost of his goods, cannot sell them as cheaply as he who buys without such expense, and who, moreover, is able to stay at home and look after his affairs.

As the next meeting of the American Pharmaceutical Association is to be held in a Southern city, it is for the interests of the manufacturers and importers of drugs, medicines, and pharmaceutical appliances, to know if it will be necessary for them to take out a local license before they can exhibit goods during the session in the manner formerly pursued. Will some of our Atlanta friends, who are familiar with the law of their State, please inform us?

The Western Wholesale Druggists' Association, composed of about one hundred firms, held a meeting at Louisville, Ky., on the 13th and 14th of February, at which a report was presented from the Committee on Legislation, containing the most forcible objections to the adoption of the Wood Tariff bill, as it is at present drafted. The Committee also deprecated frequent changes in the tariff—an evil from which numerous industries have greatly suffered of late years.

The more the bill is studied the greater appears the necessity, in the interest of all classes, that it should not pass. If adopted in its present form, it would do irreparable injury to the manufacturing interests involved; would render unproductive $50,000,000 of capital, and oblige thousands of skilled workmen to seek employment in other countries; while, on the other hand, the Government would derive no corresponding increase of its revenue, and it is very questionable whether consumers would be benefited. Among the Items in this number will be found a statement of some of the prominent faults of the bill, to which the Committee call attention.

Dr. John P. Edge has recently introduced a bill into the Pennsylvania State Legislature, entitled "An act to make provision for the sale of food, drink, and drugs in a pure state, and to provide punishment for the wilful adulteration of the same."

After defining the character and degrees of adulteration, it directs the appointment, by the court in each county, of a public analyst, whose duties shall consist in examining suspected articles, and testifying before the court as to their condition. It also provides for the fine and imprisonment of the offender.

The editor of the *Medical Times* (from which we derive our information) estimates that four-fifths of staple articles of food or drink, and at least one-half of the drugs consumed in this country, are in one way and another adulterated,

and quotes some remarkable results, following examination of articles belonging to these classes, by German authorities. An analysis is also given of the British law defining an adulteration, and the editor concludes with the following comment, which we heartily indorse :

"When we imagine the possible substitution for the wholesome and clean-fingered dairy-maid of the peripatetic collector of soap-fat and offal, who daily offends our ears and nostrils, and when we consider, also, the alum in our bread, the creasote, glycerine, and benzine in our whiskey, the superaqueous and cretaceous character of our milk, the turmeric, graphite, catechu, and sand in our tea, and the hundred other similar deceits and impositions under which we suffer, we awaken to a realizing sense of the necessity for a public analyst. The adulteration of drugs is a practice so fraught with evil both to patient and to physician, so obviously dangerous to the health of the former and to the professional success of the latter, that neither argument nor illustration is needed to demonstrate the necessity for some certain and effectual means for its prevention and punishment."

A more extended analysis of the bill is published in the *Medical and Surgical Reporter* of March 2d.

One of the most disgraceful slanders that have lately appeared in the public prints, was the letter recently published by the *Cincinnati Inquirer* and repeated by a number of journals throughout the country, professing to come from a correspondent in Staunton, Va., and making the most astonishing statements regarding the extent to which opium and morphia are being consumed in that region. The names of prominent druggists and physicians were quoted as authority for many of the statements, and it was averred that in one town there were less than twenty persons not addicted to the use of the drug. The majority of the clergymen of the place and most of the pupils in the school for young ladies were said to be among the inebriates, some of the latter spending $6.00 a week for opium. It was furthermore said, on the authority of a druggist, that 100 pounds of opium a week was the average consumption, and another is claimed to have dispensed 79,593 doses of morphia last year. A meeting of the druggists of Staunton was said to have been held on the 19th ult., to consider the alarming state of affairs.

The above are but few of the statements made by the correspondent, but they will serve as samples, and we will say, in brief, that we have letters from leading druggists and physicians which show that one and all these allegations are unmitigated falsehoods.

We would like to call attention to one fact which is incidentally mentioned in the communication, and will serve as a clue to the *raison d'être* of the whole.

"Dr. Murphy thought the bell-punch used in barrooms, which levies a tax of 2½ cents a drink, had driven many poor people to use opium."

For some months past the State of Virginia has required that persons who sell liquor by the "drink" should not only pay for an annual license, but has also obliged them to register every drink sold with a bell-punch, similar in a general way to those used by conductors in street cars and omnibuses. For all drinks costing ten cents and upwards, the State collects a tax of 2½ cents of the dealer ; for cheaper drinks, a smaller amount.

Now the effect of this law has been of benefit in two ways. Thanks to the bibulous habits of its citizens, the State has realized a large sum in the aggregate (which those who hold its promises to pay are hoping to derive some benefit from), and thanks, again, to the small but easily and faithfully collected tax, many of the little "bucket shops" and "rum holes," with their filthy adulterations, are being compelled to close their doors.

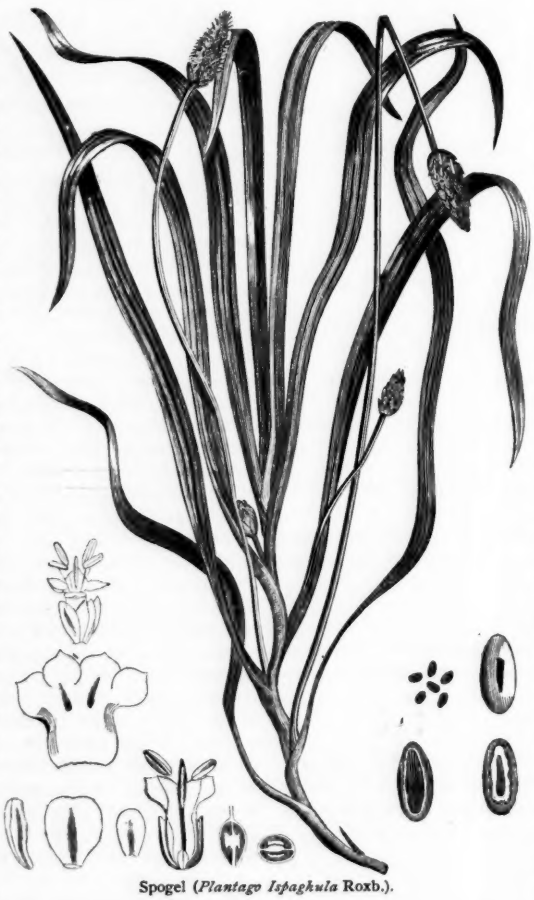
Hence all this clamor about the awful spread of the "opium-habit" as a means for creating public sentiment and leading to the repeal of the bell-punch law. Precisely the same thing has lately been done in the State of Maine, where a prohibitory liquor law has long been in force. An article of much the same general character lately appeared in a Portland daily paper, which professed to base its statements upon information derived from a "leading drug house." To see what truth there might be in the report, we wrote personally to the editor of the Portland paper, asking for the address of the firm who had observed such an enormous increase in the consumption of opium in the State of Maine, and were answered that he was not at liberty to give it. We may be mistaken, but it is our belief that the whole story was of the sort called "buncome," and that it originated among those who belonged to the "whiskey ring," and is published from motives similar to the one above referred to, viz.: to create a public sentiment in favor of a repeal of the "Maine Liquor Law."

We have the pleasure of announcing that arrangements are being completed, whereby Prof. Flückiger will publish through William Wood & Co. an edition of the Pharmacographia specially adapted to the materia medica of the United States, Canada, and the West Indies.

MATERIA MEDICA, PHARMACY AND THERAPEUTICS.

Ispaghul.

SPOGEL, or Ispaghul (*Plantago decumbens* Forsk., *P. Ispaghula* Roxb.), of which we give an illustration in this number, is a plant of variable aspect, from an inch to a foot in height, erect or decumbent, with linear lanceolate leaves, which may be nearly glabrous or covered with shaggy hairs. The flower-spikes differ according to the luxuriance of the plant, being in some specimens cylindrical and 1½ inches long, in others reduced to a globular head. The plant has a wide range, occurring in the Canary Islands, Egypt, Arabia, Beloochistan, Afghanistan and Northwestern India, particularly in the Punjab and the Peshâwur valley. It is said to be cultivated at Multan and Lahore, also in Bengal and Mysore.



Spogel (*Plantago Ispaghula* Roxb.).

The seeds are officinal only in the Indian Pharm. They are boat-shaped in form, being concave on one side and convex on the other; about the eighth of an inch in length, and about half as broad; and very light in weight, so that, according to Flückiger and Hanbury, one hundred seeds scarcely weigh three grains. They have a grayish color, tinged with pink, and are marked on the convex surface by a lengthened brownish-yellow spot.

Spogel seeds have neither odor nor taste, but when chewed they are very mucilaginous. When immersed in water they yield *mucilage* in such abundance that, in the proportion of one part of the seeds to twenty parts of water, a thick jelly is formed. Flückiger and Hanbury state that the mucilage is "not contained within the cells, but is formed of the secondary deposits on their walls as in linseed and quince pips." They also describe it, when separated by straining with pressure, as "not affected by iodine, nor precipitated by borax, alcohol, or ferric chloride." This mucilage is the essential constituent of the seeds. A *fat oil* and *albuminous matter* have also been found in spogel seeds, but nothing definite is known respecting these substances.

Ispaghul seeds have long been highly valued in India and other parts of the East for their cooling and demulcent properties, and are worthy of a trial in this country. Ainslie says they are much prized by the native practitioners in India, who prescribe them in the form of an infusion in gonorrhœa, catarrh, and renal affections. But their chief use, according to Waring and others, is in diarrhœa and dysentery, in which cases they may be employed, whether fever be present or not. In the early stages of these diseases they are best given in decoction prepared by boiling four drachms of bruised seeds in two pints of water, till the quantity is reduced to one pint, and straining.

The whole of this may be taken in divided doses during the day. It need not interfere with the use of opium or other remedies deemed necessary. In chronic diarrhœa, they are best given whole, in doses of two drachms and a half, mixed with half a drachm of sugar-candy or sugar. They are chiefly useful when the stools are very watery. A low diet and small doses of opium aid their operation. Twining says that a slight degree of astringency and some tonic property may be imparted to the seeds by exposing them to a moderate degree of heat, so that they shall be dried and slightly browned, and he

adds "that this remedy sometimes cures the protracted diarrhœa of European and native children after many other remedies have failed." The brusied seeds, when moistened with water, are also described as forming a good emollient poultice.

Note on the Administration of Iron in Pulmonary Phthisis and Senile Anæmia.

REFERRING to Dr. Fothergill's article entitled "When not to Give Iron" [see NEW REMEDIES, vol. vi., p. 324], Dr. R. W. Crighton writes to *The Practitioner* that he does not agree with Dr. Fothergill in his conclusions regarding its inadmissibility in tubercular phthisis and senile anæmia. He says: "I have for more than a quarter of a century watched closely the results of the treatment of pulmonary phthisis by the different therapeutic agents most in repute; and I feel convinced that, when judiciously used, iron stands highest in the list, next to cod-liver oil.

It would, however, be quite impossible to use the remedy in a very great many cases in which I have found it distinctly of great value, if Dr. Fothergill's rule—never to give iron when the tongue is red and irritable—were strictly observed.

Contrary to his experience, I have generally been able to give iron with advantage in these cases; usually the perchloride with quinine, once or twice a-day after meals—and, if any signs of intestinal irritation occurred, a dose of bismuth at bed-time, or occasionally small doses of morphia and glycerin with the iron.

Some of the most remarkable recoveries from far advanced phthisis which I have seen have been under this method of treatment, conjoined with cod-liver oil, when possible, and the application of the linim. iodi to the chest-wells. In early phthisis, with very rapid pulse and high temperature, I have found these often considerably reduced, and the general condition much improved by the combination, for a time, of the iron with digitalis.

A tongue loaded with fur certainly contra-indicates the use of iron; but a preternaturally clean, or irritable condition, according to my experience, does not of necessity do so in phthisis, otherwise I feel sure I should have failed to benefit many scores of cases which I have had the pleasure of seeing do well under its use in these circumstances.

I should, therefore, feel extremely reluctant to abandon the use of iron in any case of phthisis, simply from the patient having a preternaturally clean, or irritable state of tongue.

In senile anæmia, I have often witnessed the greatest improvement in giving iron; in fact, in very advanced life, I consider it to be one of the main indications of treatment.

The power of the digestive organs to assimilate it, as Dr. Fothergill remarks, is, however, much weaker than in infancy or middle life; consequently much smaller doses are required, and often the very mildest preparations.

In weak states of digestion, with flatulence and sluggishness of the liver, the saccharine carbonate with phosphate of soda, rhubarb, and ginger forms a suitable means of remedying both the anæmia and the state of the digestive organs.

In many cases, however, the perchloride with some preparation of pepsine may be given once a day after dinner; and the same preparation (in large doses) in many cases of great anæmia with enlarged prostate.

In but few cases, I believe, will it be 'better to give them tonics with alkalies and easily digestible food than to give iron.'"

Dose-Dispensing Simplified.

ON the 21st of February, Dr. R. M. Fuller, of New York, presented to the Academy of Medicine, at its meeting, the details of a method for dispensing medicines in a compact and palatable form, and which also answers the requirements of facility, economy, and accuracy. From his paper, which was published in the *Medical Record*, of March 9th, we republish the following portions, and shall, in a succeeding number, give other practical details of the processes:

"After a number of varied and careful experiments, I succeeded in devising four methods of preparation, which, thinking that they might prove of interest as well as utility to the profession, I have ventured to present to you, very briefly, and, I fear, somewhat imperfectly, this evening.

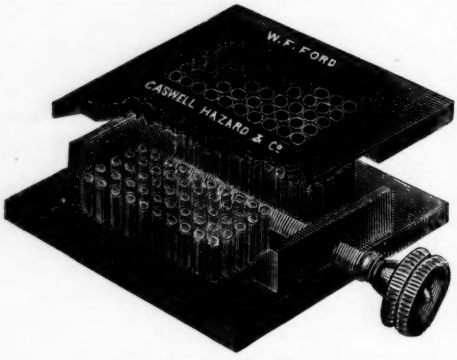
The preparations in question I have named *soluble tablets*, *tablet triturates*, *pill saturates* and *tablet saturates*, the former being designed for any powders which are to be administered in certain required doses, and the latter for certain of Squibb's fluid extracts, or other standard concentrated solutions. Of course, in the case of physicians practising in the city, where pharmacies are both so numerous and convenient, the application of these methods would be necessarily limited. They are mainly intended for physicians practising in the country, to whose use they are adapted by reason of their economy, dose-accuracy, compactness, and palatable form for dispensing.

The *soluble tablets* generally consist simply of certain medicines made into soluble paste with the aid of sugar of milk and alcohol, or water. In some instances, however, it is found necessary to employ an excipient more adhesive than sugar of milk. But in such cases, of course, as little of such excipient as possible should be used, in order that the tablet may be readily soluble in the mouth or stomach, or diffusible in a spoonful of water, and thus administered.

The tablets are intended to embrace any medicines that can be made into a paste which is not too tenacious, such as fluid extracts, or sugar of

milk, containing any per cent of chemical, such as arsenious acid, sulphate of morphia, muriate of ammonia, etc. Both preparations can be made with alcohol of eighty-five per cent or over, and pulverized acacia, according to the adhesiveness required.

When fluid extracts are used, one minim or less may be mixed with a compound of two



Tablet-making Apparatus.

grains or less of sugar of milk and pulverized acacia, allowed to partially dry, and then be made into a paste with alcohol of eighty-five per cent.

The apparatus used in preparing the soluble tablets just described consists of a small bed-plate, three-eighths of an inch in thickness, and five to seven inches square, made either of hard rubber or gold-plated metal, with a companion perforated plate, of similar dimensions, made adjustable and registering, and containing one hundred circular holes, more or less, as desired. The bed-plate is furnished with a number of small cylindrical projections, corresponding with, and fitting into the perforations of the upper plate. At each corner of the bed-plate is also fitted a short rod for the purpose of keeping the upper plate in position, and, at the same time, insuring its proper working. The upper plate is adjusted for the tablet mass, in accordance with the size of the tablet required, by a simple device of a screw, wedge, or lever. The paste, when of a proper consistency, is then introduced into the perforations of the upper plate by spreading it over its surface by means of a spatula. By the turning of the screw, or the removal of the wedge, the plate is next forced downward upon the projections of the bed-plate, which, in turn, force the tablets out in perfect shape. They are then removed and allowed to dry, after which they are used as has been described.

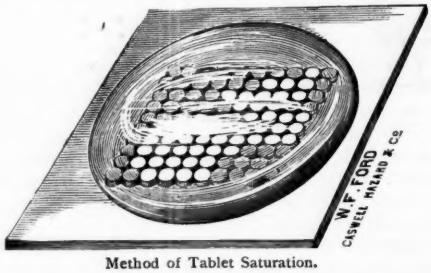
The *tablet saturates*, which are similar to the pill saturates, to be described later on, are merely porous troches, or tablets designed for saturation, the difference between the tablets and the pills, beyond the difference in shape, being that the former will absorb a much larger quantity of fluid extract, or other standard concentrated solution, than the latter. The porous quality is secured generally by mixing *finely pulverized* sugar of milk with alcohol of eighty-five per cent, and then forming the paste into tablets of any desired size, and allowing them to dry. The tablets as thus made would be adapted for fluid extracts and certain solutions of great consistency, while a paste made of sugar of milk, mixed with water, would be found better suited for fluid extracts and certain solutions of less density.

The method of medication consists of arranging any number of tablets upon a glass plate, either together, in consecutive parallel rows, as shown in the accompanying wood-cut, or, in some instances, separated.

In the former case the fluid extract, or solution, is poured over the tablets, in the proportion of one minim to two grains, or a sufficient quantity for complete saturation, while in the latter a corresponding quantity of the solution is dropped upon each tablet by means of an improved minim dropping-tube. A funnel of glass may be loosely placed over them. They are then allowed to dry, after which they are ready for use.

The apparatus used in preparing the tablet saturates is similar to that used for making the soluble tablets. It consists of a similar bed-plate, provided with similar projections, and a perforated upper plate, the thickness and the diameter of the perforations of which are made with regard to the number of grains to be contained in the tablet desired.

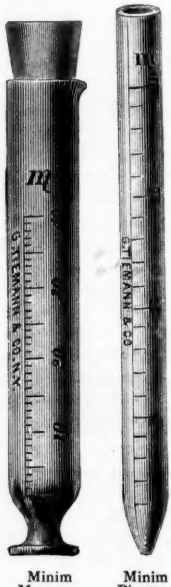
The paste for the tablets is introduced into the perforations by spreading it with a spatula over the surface of the plate, while the latter rests on a square of glass. The under surface is then smoothed over, and the plate placed into position upon the corner rods of the bed-plate, and the apparatus operated as when making the soluble tablets.



Method of Tablet Saturation.

The *tablet triturates* consist of triturations of metallic, mineral, and vegetable medicines, such as were mentioned in the paper recently read before the Academy by my friend Dr. Piffard, and found in the *Medical Record*, vol. xii., p. 756. These preparations can be mixed with alcohol of any per cent, or water, according to the adhesiveness required, and the paste thus formed

is then readily made into tablets of any size, with either of the above apparatuses, as may be desired. They may also be made very inexpensively with a less elaborate apparatus, consisting of a single plate of hard rubber, containing two hundred holes of any dimension required, drilled as close together as possible. These being filled with the paste, the tablets, when not too tenacious, may readily be removed in proper shape by holding the plate in one hand, and with the other tapping it with a spatula, when most of them will fall out, those that may remain being easily removed by pushing them out with a small rod. Dr. Piffard has found that a plate three millimetres in thickness, containing holes six millimetres in diameter, will produce tablets of about one decigramme in weight, while a plate four millimetres in thickness, with holes eight millimetres in diameter, will produce tablets of about two decigrammes in weight.



Minim Measure. Minim Pipette.

The *pill saturates* possess two favorable qualities, namely: they are made easily, and at an extremely low cost, those made with fluid extracts costing only about twenty-five cents per thousand. But little time is needed in their preparation, and the only apparatus required is a dispensing vial and a minim measure, or pipette. In the numerous experiments I have made, I have found that solutions in alcohol of eighty per cent, and aqueous solutions concentrated, were best adapted to the purpose of saturation. I have, however, used various other liquids and solvents with equally satisfactory results.

The process of saturation is very simple. Sufficient sugar globules of uniform size are introduced into a square dispensing vial of either four, eight, or sixteen ounce capacity, according to the number of pills designed to be saturated, to nearly cover one of its sides when it is placed in a horizontal position. I have found that No. 60 pill, which is six millimetres in diameter, is of suitable and convenient size for the purpose. (These globules, which are made of refined cane-sugar, are numbered as to their size upon a basis of measurement of *ten diameters* in millimetres.) The vial is inclined, and sufficient liquid—in which has been dissolved the required amount of medicine for each pill—is introduced by means of a minim pipette or measure, to completely saturate the globules. The vial is then held in a horizontal position and the pills agitated to equally moisten them, care being taken to avoid spreading the liquid on the other sides. While in this position, the vial is corked and allowed to rest until the pills are thoroughly saturated, which requires twenty-four hours or more. The vial remaining in the same position, the cork should be removed and the pills allowed to dry by evaporation.

Where alcohol of eighty per cent or more is the solvent, the solution to be introduced into the saturate can be of any strength. This principle applies also to the other solvents, such as ether, in which sugar is insoluble, and which will evaporate on standing. When water, or alcohol of less than eighty per cent is the solvent, the solution should be concentrated to avoid the dissolution of the pills. The capacity of absorption possessed by the pills is varied; the maximum being one minim to about 15½ grains when the solvent is alcohol of eighty per cent and over. The proportion, however, is not so large where concentrated aqueous solutions, or alcoholic solutions of less than eighty per cent, are used.

When these saturates contain volatile medicines, such as camphor, etc., it is expedient to give them a thin coating of albumen, or some similar transparent substance. While this prevents volatilization, it also enhances the appearance of the saturate. The method of coating, like the process of saturation, is also simple. The saturates are agitated in a little albumen, and, when covered, are placed on a glass plate, separated, and allowed to dry. A second or third coat may be given, if necesary."

Following the description of methods and apparatuses, Dr. Fuller showed specimens of a number of preparations, as follows:

Tablets.

Acid. arseniosi.....I-20, I-50, and I-100 gr.
Aconitia.....I-50 "
Aconiti rad. ext. fl. (Squibb's).....½ and 1 ♏.
" " tinct. " .....½ and 1 "
Ammoniæ muriat.....3 and 5 gr.
Antimon. et potass. tartras.....I-50 and I-100 "
Atropia.....I-60 "
Belladonnæ fol. ext. fl. (Squibb's).....I-2 and 1 ♏.
Calomel.....½, 1, and 2 gr.
Digitalin.....I-60 "
Ergotæ ext. fl. (Squibb's).....½ and 1 ♏.
Ferri lactas.....1 gr.
Hydrarg. biniodidi.....I-32 gr.
" chlor. corros.....I-10 "
Ipecac. ext. fl. (Squibb's).....¼, ½, and 1 ♏.
Morphiæ sulphas.....I-8, I-6, ¼, and ½ gr.
Nucis vomicæ ext. fl. (Squibb's).....¼, ½, and 1 ♏.
" " tinct. " .....1 "
Potass. bicarb.....3 and 5 gr.
" chloras.....3 and 5 "
Quiniæ bisulphas.....½, 1, and 2 "
Sodæ bicarb.....3 and 5 "
Strychnia.....I-60 "

Pills.

Aconiti rad. ext. fl. (Squibb's).....I-6, I-10, and I-20 ♏.
Belladonnæ fol. ext. fl. " .....I-6, I-10, and I-20 "
Capsicum " " " .....I-6, I-10, and I-20 "
Ipecac. ext. fl. (Squibb's).....I-6, I-10, and I-50 "
Nucis vomicæ ext. fl. (Squibb's)...I-4, I-10, and I-50 "

136 W. 42D ST.

Dialyzed Iron Hypodermically.

PROFESSOR DA COSTA has employed dialyzed iron in a novel manner, in a case of chlorosis, in a woman aged twenty-one years. The patient had daily injections of 15 minims of the iron solution, at first diluted, but afterwards of full strength. The points where the injections were made showed no evidence of inflammatory action. Subsequently the dose was raised to 30 minims, and convalescence was rapid. After the hypodermic use was ceased, 20 drops in water were given thrice daily for a short time. No constipation, indigestion, or other disturbances resulted from this mode of using the remedy, and recovery was considered to have been more rapid than it would have been with the usual way of administering it.

Dialyzed Iron in Arsenical Poisoning.

JAMES HAYES, M.D., of Simcoe, Ont., publishes, in the *Canada Lancet* for March, a case of arsenical poisoning treated with Wyeth's dialyzed iron. Following an emetic and free draughts of warm water, a tablespoonful of the dialyzed iron was given and soon ejected; doses of thirty drops were then given every twenty minutes for two hours. Two hours after the doctor's arrival, symptoms of collapse set in, and were treated with brandy, hot bottles, and friction. The patient was restored to health in about ten days, and complained during convalescence of weakness, thirst, and a burning sensation in the stomach. The doctor estimates that fully a teaspoonful of arsenious acid was lying in the stomach from half an hour to an hour before he saw her.

Stibiodermic Treatment in Acute Articular Rheumatism.

M. I. GUERIN read a paper at a meeting of the Paris Academy of Medicine, on the 4th of September, on the abortive treatment of acute articular rheumatism by means of what he terms the stibiodermic method. This consists in the inunction every six or eight hours of an ointment containing one part of tartar emetic in two of lard. He states that a rapid reduction may thus be obtained of the pain experienced in the early stage of coxalgia. The cessation of the pain he attributes to a dynamic action of the remedy, and not to any revulsive action. The same results were obtained in gout when the symptons only preluded the definitive attack, three or four inunctions being sufficient to prevent the onset of the disease. When, however, the attack was fully developed, a flying blister, placed on the centre of the swelling, quickly effected its removal. (*Archives générale de Médicine*, and *The Practitioner*.)

Black Ink.—The most agreeable bluish-black writing ink, which never gets mouldy, does not corrode steel pens, and may be prepared by anybody without trouble and at a trifling expense only, is made by dissolving 1 part of nigrosine in 80 parts of water. One pound of nigrosine may be bought for about $3.50.

HOW TO DETECT ADULTERATIONS BY MEANS OF THE MICROSCOPE.

BY LOUISA M. REED.

GREAT advances have been made during the past twenty-five years in microscopical investigations, particularly in the field of animal and vegetable histology. As applied to pharmacy, however, microscopy is yet in its infancy; although, young as it is, its value cannot be estimated. The microscope carries the work of analysis farther than chemistry is yet capable of doing. Chemistry is adapted to the detection of mineral substances used for adulteration, but the microscope may be used for all organized structures, whether vegetable or animal, and is able to detect them in even minute quantities. Chemistry tells the presence of starch, but it can in only a few cases tell the plant from which the starch came. Chemistry gives the presence of woody fibre; but the microscope gives the name, and generally the part of the plant from which it has been taken.

As a microscope is absolutely essential for this work, perhaps it will not be out of place to say a word in reference to buying one. A simple, cheap stand—as a rule, the fewer adjustments a stand has, the more effectually can it be worked—with an A eye-piece and two good objectives are all that are necessary for practical work. The best objectives for use are one inch and one-quarter inch. The whole can be bought for thirty-five dollars, or even less.

Measurements.—It is necessary, in working with any microscope, to know what is the magnifying power of its objectives. In order to ascertain this, it is necessary to have a stage micrometer, divided into known spaces; as by lines $\frac{1}{100}$ and $\frac{1}{1000}$ of an inch apart and a foot-rule. Place the micrometer in focus the same as an object, measure off from the eye-piece 10 inches, hold the foot-rule at this point, and measure the distance between two lines on the micrometer; divide the space covered on the rule by the distance between the lines on the micrometer, and it will give the magnifying power of the objective. To illustrate: two lines $\frac{1}{1000}$ of an inch apart cover $\frac{3}{8}$ of an inch on the rule—held ten inches from the eye-piece—then $\frac{3}{8} \div \frac{1}{1000} = 375$, the power of the objective. Essentially, the same rule is observed in measuring any object under the microscope; that is, the space on the rule covered by the object—the rule held 10 inches from the eye-piece—divided by the magnifying power of the objective gives the actual size of the object.

Starch is the most generally diffused, excepting protoplasm, of all vegetable substances within the cell-wall. When found in the older structures, roots, stems, seeds, etc., it is found nearly pure; when found in freshly-growing tissue it is in union with chlorophyll. Starch grains contain carbon, oxygen, hydrogen, and some mine-

ral matter. They are insoluble in water, alcohol, ether, and oil; are destroyed by potassa, and colored blue or violet by iodine—the color depending on the density of the granule and the strength of the iodine. The starch grains of different families and different species of the same family differ so much in size and general appearance as to be easily identified. The largest starch grains known are those of tous-les-mois, which are frequently $\frac{1}{300}$ of an inch in length, while the smallest are those of rice, which are occasionally $\frac{1}{1000}$ of an inch in diameter.

Potato Starch (see Fig. 1).—Botanists have taken the potato-starch grain as the typical form with which they compare others. So we should have a good knowledge of this grain. If the commercial starch is not accessible, the grains can easily be obtained by cutting a fresh potato with a clean knife, and then floating on a glass slide, with a drop of water, the white substance which adheres to the side of the knife. Or shave off a very thin slice of the potato, and place it in a watch-crystal in a little water; the fine sediment settling to the bottom will be the

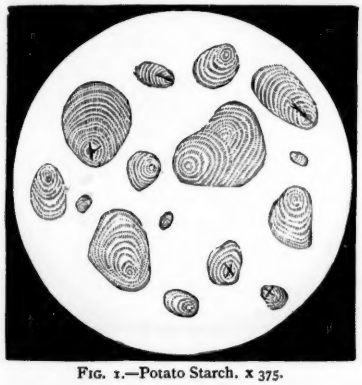


FIG. 1.—Potato Starch. x 375.

starch. There are two leading theories regarding their growth. Some claim that the surface of the grain is first formed, and that it grows by layers being deposited on the inner surface of the case, which gradually expands until it reaches its normal size. The other and the more generally accepted opinion is, that the nucleus is first formed, and the grain grows by means of deposits of starchy matter around this nucleus, and each successive layer contains less moisture than the preceding layer; this explains the appearance of rings or laminæ seen so plainly in the potato and many other starches. A new theory has been advanced in Sachs' Botany (page 59), which is too long, however, for an explanation in this connection. In specimens which have been subjected to even a slight degree of dry heat, there appears a black line or star-shaped mark over the nucleus. The heat evaporates the moisture from the grain, and there must be a shrinkage on the surface to correspond with the evaporation. This is the greatest over the nucleus where is the greatest moisture. The grains are round, ovate, irregularly oval, or egg-shaped, nearly transparent; nucleus eccentric (not in the centre), and in the smaller end of the grain, and surrounded by numerous distinct rings or laminæ. The grains are very irregular in size; the smallest are just perceptible, and the largest are frequently $\frac{1}{100}$ of an inch in length. A very decided cross is seen when viewed with polarized light, the arms of the cross radiating from the nucleus, not from the centre of the grain. This is the cheapest, and, therefore, the most common starch; there being from $800,000 to $1,200,000 worth thrown on the market annually. Probably the greatest part is used for adulterations.

Arrowroot-starch closely resembles potato-starch. The grains are much more uniform in size than those of the potato, and are about $\frac{1}{300}$ of an inch in length. The nucleus is generally in the larger end of the grain, while in the potato-starch, as before mentioned, it is in the smaller end; while the rings are finer and more

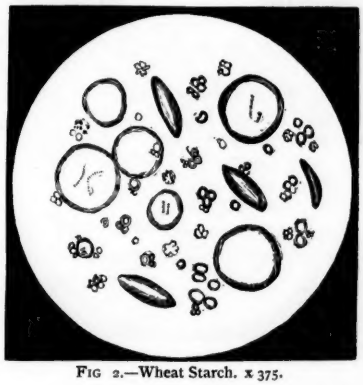


FIG 2.—Wheat Starch. x 375.

numerous. Thirty or forty rings can frequently be counted in one grain, while potato-starch sometimes has only three or four. Arrowroot-starch takes a distinct cross with polarized light. It is very frequently adulterated with potato starch.

Wheat-starch (see Fig. 2).—Pure wheat starch can be obtained by cutting through a kernel of wheat, and scraping with the point of a knife a little from the central part of the kernel on to a glass slide. There are two distinct kinds of grains found here; small spherical or angular grains floating frequently in a mass, many times more numerous than the large grains, and about $\frac{1}{5000}$ of an inch in diameter. The others are large, lenticular grains, which, when viewed on the face, appear like a spherical grain. When viewed on the edge, they have the appearance of a double-convex lens. This lens-shape can easily be proved by touching the cover glass gently with a pencil-point, and watching the

grains roll over in the field. This should always be done when testing for adulterations with starch grains. There is seldom any nucleus, but when it is present it is central, and still more seldom are there any rings. When viewed with polarized light, only a faint cross is seen, if any.* When subjected to dry heat, the grains are changed very much in appearance; being warped considerably from their normal shape. They are larger, more brittle, and more transparent. Yet generally they can be identified when subjected to either dry or moist heat, if the moist heat be not raised to the boiling point. The large grains of wheat-starch in their normal state are very uniform in size for the same variety, but the starch-grains of the different varieties differ considerably in size. The average diameter of the grain in the eight varieties examined is $\frac{1}{681}$ of an inch.† Barley and rye are closely related to wheat. All of these are used extensively for adulterations.

Barley-starch is composed of large and small grains. The large grains are smaller than those of wheat; being about $\frac{1}{1000}$ of an inch in diameter. There is less difference between the long and the short diameters than in wheat-starch, so that when the grains are rolled over they present less of a lens-shape, being rounder. Rings and a star-shaped nucleus are quite frequently apparent. The small grains are more angular, frequently have a nucleus, and average $\frac{1}{8000}$ of an inch in diameter. No cross is seen when viewed with polarized light.

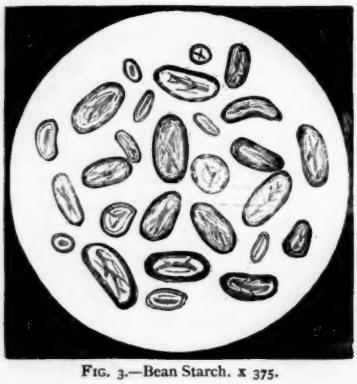


FIG. 3.—Bean Starch. x 375.

Rye-starch grains are larger than those of wheat, very seldom do they show any rings, and when present they are eccentric; occasionally a star-shaped and central nucleus is present. The large grains average $\frac{1}{727}$ of an inch, the small grains $\frac{1}{5717}$ of an inch in diameter. A distinct cross is seen in rye-starch with the polarized light. After examining these starches in their natural condition, they should be subjected to both dry and moist heat, and examined, as their appearance is much changed by heating. As adulterants, they are frequently so treated.

Bean-starch (see Fig. 3).—We have here a very different appearance from that of any other starch, excepting that of the pea. The grains are regularly oval and quite uniform in size. A dark line with ragged edges generally extends the whole length of the grain; cross-marks being frequently seen. Faint rings are seen near the edge of the grain. The grains average about $\frac{1}{647}$ of an inch in length and $\frac{1}{1000}$ of an inch in breadth. Dry heat renders the grains more brittle, and destroys the nucleus, but not the rings. Moist heat expands, distorts, renders more transparent, and destroys both rings and nucleus.

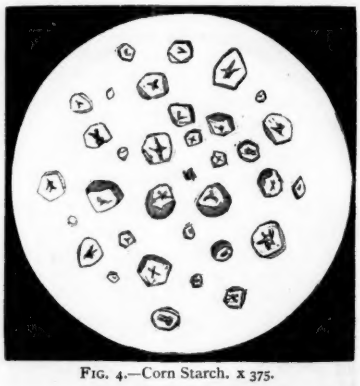


FIG. 4.—Corn Starch. x 375.

Pea-starch is the nearest like that of bean-starch. The grains are smaller and more slender; being generally less than $\frac{1}{700}$ of an inch in length.

Corn-starch (see Fig. 4).—We come now to a starch-grain bounded by plane faces and angles instead or curves. The grains are angular, have no rings, and present a round or star-shaped, central nucleus. The average grain is $\frac{1}{1800}$ of an inch in diameter. The shape is but little changed by dry heat, but is entirely destroyed by moist heat. The grains found in the central or outer part of the kernel of corn are more angular than those found in the inner part. This variety is frequently substituted for wheat-flour, under the name of "amylum."

Rice-starch (see Fig. 5).—The starch-grains of rice resemble very closely those of corn. They

* The statement is made by some botanists that wheat-starch gives a cross under polarized light, but I have never been able to detect any closer approach to one than a nearly uniform shadow floating over the grain.

† These measurements have been made with considerable care. In each case 20 grains, as nearly typical as possible, were selected, and accurately measured; the average was then taken with the following results. The largest grains of Treadwell wheat measured $\frac{1}{861}$ of an inch in diameter; Deihl, $\frac{1}{816}$; Wicks, $\frac{1}{681}$; Egyptian, $\frac{1}{634}$; Russian, $\frac{1}{1134}$; Clawson, $\frac{1}{1088}$; Schaffer, $\frac{1}{1000}$; Vienna flour, $\frac{1}{861}$. There is also considerable difference in the size of the small grains. Schaffer small grains measure $\frac{1}{1700}$ of an inch in diameter; Treadwell, $\frac{1}{1020}$; Vienna flour, $\frac{1}{8166}$; Russian, $\frac{1}{4000}$; Egyptian, $\frac{1}{6000}$.

are much smaller, however; being only $\frac{1}{850}$ of an inch in diameter. The grains are angular; being bounded by plane sides only, are without rings, and have a central nucleus, which is either a dot, a line, or star-shaped. The grains are aggregated together in angular or very irregular-shaped masses. Rice is used much more extensively in England as an adulterant than in America, and commercial rice flour is frequently adulterated with corn-starch.

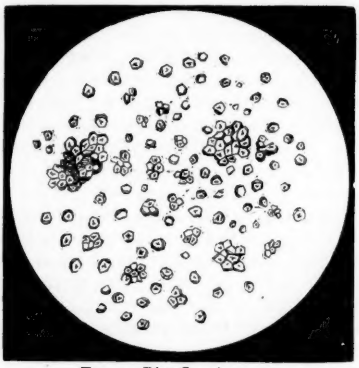


FIG. 5.—Rice Starch. x 375.

SCHOOL OF PHARMACY,
UNIVERSITY OF MICHIGAN.

Liquid Rennet.

THE material for preparing liquid rennet is, as is well known, the fourth stomach or so-called rennet bag of young ruminants, generally of calves, because young goats or lambs are not always obtainable in sufficient number. Concentrated liquid rennet, moreover, can only be prepared from dried stomachs, preferably such as have been inflated and dried rapidly in the air. Much trouble has been experienced in regard to the keeping qualities of liquid rennet, and various plans have been proposed to prevent it from spoiling. Last year, several firms in Germany began to manufacture *extract* of rennet, which was said to keep indefinitely and could at any time be made into a solution. Mr. Soxhlet now recommends to use boracic acid as a preservative of the *liquid* preparation. His process is as follows:

Dried calves' stomachs, which should have been kept at least three months, and from which the smooth and non-rugose portions have been removed are cut up, either by hand or by a chopping machine, according to the quantity to be operated on. To every 100 grams of cuttings 1 litre of water, 50 grams of common salt, and 40 grams of boracic acid are added, the whole well agitated, and allowed to macerate at the ordinary temperature for about 5 days, with frequent stirring or shaking. After the lapse of this period, 50 grams more of common salt are added, and the liquid is filtered through large double plaited filters, which consumes some time, not more than 1 litre passing through one filter in 48 hours. Whenever a filter ceases to work, it needs to be exchanged for a new one. Generally every litre of water originally used is represented by 800 cc. of filtrate, which at first exhibits a coagulating power of 1 to 18,000; that is, 1 part of it is capable of coagulating 18,000 parts of milk. Mr. Soxhlet has ascertained that this power gradually diminishes until it reaches a certain point, beyond which it progresses only very slowly; he has also found that a coagulating power of 1 : 10,000, may be produced by diluting the 800 cc. of filtrate with 200 cc. of a 10 % solution of common salt, which had previously been saturated with boracic acid; and that this solution requires about two months to arrive at a constant coagulating power, namely, 1 in 10,000.—From *Zeit. des Oest. Ap. Ver.* 1878, 61.

Rapid Estimation of Acids, Alkaline Carbonates, and Urea.

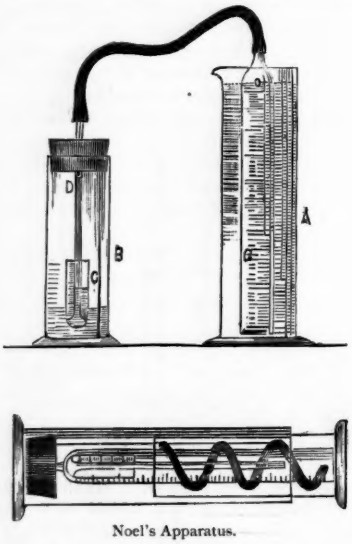
DR. G. NOEL publishes in the *Répertoire de Pharmacie* (1877, No. 22) a convenient method for rapidly estimating acids, alkaline carbonates, and urea, which depends, in the first two cases,* upon the liberation of a quantity of carbonic acid gas from the mixture to be introduced into the apparatus. This latter (see figure) consists of two parts: 1, a mixing-vessel, *B*, graduated into cubic centimetres, and a small receiver, *C*, likewise graduated and provided with a central open tube, ending at D, the chief use of which is to retain the receiver in an upright position. 2, a taller vessel, *A*, filled with water or another liquid, into which is immersed an elongated bell-glass, the pointed open end of which is connected by rubber-tubing with the glass tube passing through the stopper of the mixing vessel. When using the apparatus, the reagent is placed into the mixing vessel, *B*, the substance to be assayed is introduced into the smaller tube, *C*, and the larger vessel, *A*, is filled either with pure water, if urea is to be assayed, or with water covered with a thin layer of petroleum or oil, in the case of carbonates, in order to prevent the absorption of carbonic acid gas by the water.

The application of the apparatus is very simple. A weighed quantity of a carbonate, for instance, in solution, having been introduced into the small tube, the outer vessel is charged with a quantity of dilute sulphuric acid more than sufficient to decompose the carbonate; the mixing flask is inclined, whereby the two liquids mix, and carbonic acid gas is liberated, which displaces a portion of the water in the bell-glass. The latter is gradually lifted out of the water, until, at the end of the reaction, the level both inside and outside of the bell-glass is equal. If the water has reached, before the experiment to

* The author also applies the method to the assay of alkalies; but it is too circumstantial to be of great value.

the mark O—which should in all cases be assured—the number of cubic centimetres from which the gas has displaced the water corresponds to a certain weight of carbonic acid gas, which is conveniently ascertained from tables accompanying the instrument.

For the estimation of acids, the little tube, *C*, is charged with a quantity of carbonate, in solution, more than sufficient to neutralize all the



Noel's Apparatus.

acid. In this case similar tables indicate the amount of acid, varying with the nature of the latter, and corresponding to the quantity of carbonic acid set free. In the case of urea, the urine is introduced into *C*, and *B* is charged with a solution of sodium hypobromite. The liberated nitrogen is collected in the same manner as the carbonic acid gas in the previous instances, and the amount of urea found by consulting the tables which are furnished.

Salicylate of Zinc.

At the request of Dr. Poignet, Mr. Ferd. Vigier has prepared a salicylate of zinc, of which he gives the following account:

Preparation.—Add crystallized salicylic acid to distilled water in a porcelain capsule; heat it, and, without waiting for its complete solution, add to it gradually oxide of zinc made into a smooth milk, with water. Combination begins immediately, and the addition of the oxide is interrupted as soon as any of it is seen to remain undissolved after a few minutes' boiling. The hot solution is filtered, and by cooling the solution, the salt is obtained in long, needle-shaped crystals. The mother-water having been removed, the crystals are dried in the air, or in a warm place, between folds of filtering paper. By further concentration the mother-liquor yields an additional crop of crystals. In preparing this salt, all contact with other metals, particularly with iron, must be scrupulously avoided. If the solution should be at all tinted (from organic matter), it may be decolorized by boiling with animal charcoal and filtering.

In concentrating the solution, the boiling must be interrupted as soon as the liquid ceases to hold all the salt in solution; otherwise a basic salicylate of zinc would be formed.

Instead of the oxide recently precipitated, carbonate of zinc may be used; but, owing to the time consumed in properly washing this compound, it is less advantageous than the other.

Properties.—Neutral salicylate of zinc crystallizes in long, white, silky needles, having a satin lustre. Its taste is sweet at first, afterwards styptic and bitter; 100 parts of water at 20° C. (68° F.) dissolve 5 parts of the salt. It is very soluble in alcohol, ether, wood-spirit; insoluble in spirits of turpentine, and almost so, in carbon disulphide. Its composition corresponds to the formula $Zn(C_7H_5O_3)_2+3\,Ag$.

Uses.—This salt has been employed with success by Drs. Poignet and Desmarres, as an antiseptic astringent application in blennorrhœa, cancerous sores of the tongue, purulent ophthalmia, etc. In blennorrhœa, it may be employed in solution containing from 1 to 2 parts in 200 of water, and in cancerous affections a solution of 4 parts in 100 of water may be used.—*Journ. de Ph. et Ch.*, 1878, 41.

PULVIS DOVERII SACCHARATA.

BY HENRY G. PIFFARD, M.D.

The Pharmacopœial directions for making the Pulv. Ipecac. Co., or Dover's powder, is as follows:

"Take of ipecacuanha, in fine powder, opium dried and in fine powder, each sixty grains; sulphate of potassium, a troy ounce. Rub them together into a very fine powder."

The compound resulting from the above has not given uniform satisfaction, as evidenced by the fact that numerous modifications have been proposed. Some years ago, a gentleman suggested that an equivalent value of morphia be substituted in order that greater uniformity in strength might be obtained. This would do if morphia and opium, in relative proportion, were therapeutically equivalent, which is not the case. A recent writer suggests that bromide of potassium be substituted for the sulphate, as he regards the latter of no special importance, except as an aid to the mechanical subdivision of the other ingredients, while the bromide would, by its sedative influence, assist the action of the opium. To this there appear to be two objections. First, the bromide is not as good a mechanical agent as the sulphate. Second, the effects of opium and the bromide are not parallel, and I can conceive of many conditions in which

their combined effects would be far different from those of the officinal preparation.

The objections to the present compound are its bad taste (due, in part, to the sulphate of potassium) and its varying strength as usually prepared. To obviate these I propose the following formula:

Take of opium (assaying 10% of morphia) 1 part; ipecacuanha, 1 part; sugar of milk, 8 parts. Misce et tere bene s. a.

If the opium employed should contain more than 10% of morphia, a correspondingly less quantity should be used, and the difference accounted for by an additional amount of milk sugar, and *vice versa*. If the foregoing should be adopted as an officinal formula in the next Pharmacopœia, the probabilities are that careful pharmacists would more frequently assay the opium which they buy, or that they would purchase powdered opium only from dealers in whose representations they have confidence. Some samples of powdered opium contain a much larger proportion of morphia than others, yet on inquiring this day at two of our most prominent pharmacies, I was unable to learn the particular strength of the opium employed by them in dispensing. The preparation that I here recommend for trial can be obtained from Messrs. Caswell, Hazard & Co., under the name that heads this article.

I would like in this connection to say in correction of the report of the meeting of the Therapeutical Society, given on page 63 of NEW REMEDIES, that to Dr. S. Sherwell, of Brooklyn, is due the credit of introducing here the Calcutta linseed, shown by me at the meeting referred to.

10 W. 35TH ST., NEW YORK.

A New Filter-Pump.

THE application of filter-pumps, which was originally confined almost exclusively to chemical laboratories, is gradually extending to practical uses in pharmaceutical and technical operations. Besides Sprengel's mercury pump and Bunsen's somewhat frail and complicated water-pump, a number of modified instruments have been proposed during the last 8 or 10 years. We have ourselves described and illustrated several such contrivances. (NEW REM., 1877, 132, 216.) Mr. Eduard Rennard, in the *Pharm. Zeit. f. Russland* (1877, 673), gives a description of Bulk's modification of this apparatus, which recommends itself by its simplicity and cheapness. Its construction will be understood from the accompanying figure. A strong glass tube, of 6–8 millimetres bore, and 15 cm. long, is drawn out near its upper third to about half the original diameter (*a*); upon this is blown, at *d*, a lateral tube bent at a right angle; and at *c* a short tube, ending in a fine point and reaching just to the contracted portion of *a*, is fused into the end of the latter tube. The lower portion of this is either bent at a right angle, or better, a small bulb is blown upon it near the end (see fig.). The lateral tube is connected, by means of rubber-tubing, with the water-faucet, and the end at *c* is connected with the outer limb of the manometer tube. At *v*, however, there is interposed a check-valve, to prevent any water from passing back into the manometer. This check-valve is constructed on Bunsen's principle. A small glass tube is closed at one end, and a small hole is blown into its side, about 4 mm. from the point. A short piece of rubber-tubing, which must fit snugly, but without pressing the tube, is slipped over it, and a slit, about 1 cm. long, is made a little to one side of the hole. On blowing into the open end of the tube, the

Bulk's Filter-Pump.

air will escape through the hole and slit; but on applying suction, the hole is tightly closed by the rubber, and will allow nothing to pass. This little valve is slipped into a larger tube, and its open end fused together with the end of the outer tube. On inserting this check-valve into the rubber connections at *v*, the open end must be made to look towards *c*. The manner of applying the apparatus for filtrations is self-evident from the illustration.

Transparent Glycerin Jelly.—Take 1 oz. transparent soap, dissolve it in 4 ozs. of water and 4 ozs. glycerin, by the aid of heat. While still warm add 20 ozs. glycerin, and when nearly cold add perfume and pour into glass jars. This will make a transparent jelly of a pale amber color.

ON THE MEDICINAL VALUE OF CROCUS SATIVUS.

SIR :—Your note on page 51 of the February number, reporting an instance of saffron adulteration, matured my desire to express my opinion on the value of *Crocus sativus*, and for that purpose I would solicit a little space in your columns.

This effectual drug seems not only to have been entirely abandoned by the medical profession of this country, but is in commerce actually supplanted by the inert flowers of *Carthamus tinctorius*, by which the genuine saffron is so often adulterated. Its liability to adulteration is easily understood, when we recollect that this drug is formed of the dark-red stigmas of the flowers, which serve to conduct the pollen into the utricle; but in collecting it the stigma is generally left in connection with the stylus, which is more whitish yellow. A single saffron fibre is about an inch and a half long, divided into three little lobules, delicately serrated at the top, and surmounts sometimes the corolla of the flower; it is of the thickness of a sewing-thread, tapering towards its insertion, and though tubular, collapses on getting wilted, and then appears flat. Since each flower, contains only one stigma, it is evident that a large number of them is required to make up a pound of the drug. This naturally scanty yield, requiring, from the short life of the flower, a daily and toilsome attention, accounts for the high price of the drug, while the adulteration saves a considerable amount of time and labor, and promises a greater pecuniary profit. Saffron commands always a high price in the market, and therefore many American druggists do not keep it at all, and say, like the fox, "the grapes are too sour." They are not in the least scrupulous to put, instead of it, the flowers of *Carthamus tinctorius* into the hand of the inquirer, telling him "this is American saffron, the Spanish is just as inert as this, and is used only by the lower ignorant class, who are still clinging to their inveterate superstitions." But the German authorities do not think so, and therefore have included it in the most recent list of the articles which every apothecary is bound by law to keep constantly on hand.

That crocus was known to the ancients is evident from the fact that Solomon, *Canticles* iv. 14, mentions it among the number of precious spices (974 B.C.). Homer in the Iliad speaks of it in familiar terms, calling Aurora "saffron-mantled," and in the fourteenth book tells us, when Juno had persuaded and biased Sleep to close the bright eyes of Jupiter, "the divine earth produced fresh herbage, among them the dewy lotus, and the crocus, and the hyacinth" for a couch. There is still frequent inquiry among the people for this drug at seasons of epidemics of eruptive fevers, to be used in the form of an infusion under the name of "saffron tea," in expectation that it will promote the eruption, especially of scarlet fever, but safflower being always dispensed by the druggists instead of saffron, the resulting perspiration of the patients can only be attributed to the hot beverage. It is, however, a matter of observation that the perspiration of patients, after the use of crocus, is tinged so yellow that it stains the linen; therefore we have a right to suppose that it will bring its virtue to bear on the system in general. This suggestion is confirmed by Starks' investigations. That this drug cannot be inert is evident from its strong odor which, after continued inhalation, causes numbness of the head, giddiness, and headache; and further, from its peculiar aromatic, pungent taste.

All its virtue being vested in the aromatic principle, which it loses by age and exposure to light and to water, it should be rejected as useless when it has been exposed to the action of such agencies. Dioscorides gave the precaution to make use only of the fresh article, of good color and proper odor. The inefficiency which results from adulteration accounts for the contradicting results experienced by different practitioners. König and others state that the odor of a quantity of saffron caused a strange gayety and unrestrainable laughter; and Schulzius mentions the case of a child to whose nose a bottle emptied from saffron was applied, and who commenced instantly to laugh. He takes this for a proof of the exhilarating virtue of this drug. A little pad stuffed with saffron and camphor has been recommended to melancholic persons, to be worn on the pit of the stomach (scrobiculus cordis), or a bit of the drug to be put in their soup. Hippocrates used saffron externally, to alleviate rheumatic and arthritic engorgements. So did Galen. Serapius attributed great virtue to it in affections of the chest, and other ancients called it "the king of vegetables, "the panacea vegetabilis," "the soul of the lungs." A small cushion stuffed with the drug has been placed over the stomach, in order to calm and prevent hysterical vomiting. German practitioners use it much for children suffering from pains, which in the adult might call for the exhibition of opium. Jüngken, one of my illustrious tutors, recommended it highly in various affections of the eye. He always advised its addition to collyria and poultices; and practioners of other nationalities, too, seem to entertain a high opinion of this drug, for Martin Lauzée declares it, in his valuable essay on this subject in the *Journal des Sciences Medico-Chirurgical*, May and June, 1851, to be a very useful medicine. He states that M. Lopez, a Spanish physician, who, when Alicante was visited by a severe epidemic of ophthalmia, suffered from an insupportable photophobia, and who applied fomentations of a decoction of flaxseed, with a small quantity of saffron, to his eyelids and eyebrows, and he felt instant relief,

the pain gradually abating, and soon altogether disappeared, so that he seemed for a moment to feel perfectly well. But he afterwards passed through a series of the strangest optic illusions.* Lopez employed the same medicament in two other cases of ophthalmia in young men, where it resulted in a complete anæsthesia. He could prick and pinch the patients without apparent reaction, and he might have performed a minor surgical operation before the patients recovered sensibility.

Overdoses of this drug produce delirium, vertigo, intolerable headache, drowsiness, paleness, spasms, sardonic laughter, and finally death from congestion of the brain. In females it causes severe uterine hæmorrhages. Dioscorides states that three drachms taken in water are sufficient to cause death. Horses are said to have had hæmaturia produced by its strong odor. No wonder, then, if it is true, as asserted, that persons sleeping in a closed room where quantities of these blooming plants are kept, died from their emanations.

Lauzée says there does not exist any preparation of opium which might be employed in the same manner, nor would it be advisable to substitute the one for the other. Velpeau recommends a paste of 2 parts of saffron and 1 part of sulphuric acid on cancerous excrescences. Rust recommended the same paste for condylomata. Larrey used 2 or 4 parts of saffron to 32 parts of cerate, for dressing burns, and it formed an ingredient of his eye balsam. Cazin used it in the same form for chapped hands, excoriations, intertrigo in children, etc.

Dorvault ("L'Officine ou Répertoire général de Pharmacie pratique," 1872) speaks in favorable terms about this drug.

Knowing that its value is not appreciated in this country, I had already turned the cold shoulder on it when, some time ago, I happened to call on a German apothecary, who was just engaged in unpacking a quantity of the genuine article. I at once renewed my friendship with the remedy, with most satisfactory results.

I find it very effectual for the alleviation of the griping pains accompanying summer complaint (cholera infantum). It may be given to babies of two or three months, in doses of half a grain twice or thrice daily, in combination with calomel, magnesia, or rhubarb, according to circumstances. In such moderate doses it is not somniferous, and the children under my hand brightened up in a remarkable degree, so that their improved appearance at once reminded me of the statement of others: that it "exhilarates the spirits, relieves pain," etc., to the great joy of the parents.

The German Pharmacopœia gives the following direction for the preparation of a Syrupus Croci: 1 part of saffron is macerated with 24 parts of the best white wine during thirty-six hours; in 22 parts of the strained fluid, 36 parts of best sugar are dissolved, to form a syrup. This syrup is generally used as a soothing-syrup, and also in cough and other pectoral affections.

In Germany it forms generally an important ingredient of "Pulvis puerorum," or "Pulv. infantum," in combination with carbonate of magnesia, orris-root, rhubarb, fennel seed, etc. They have in Germany also a tinctura croci, in the proportion of 1 part saffron digested with 10 parts diluted alcohol.

A. PATZE, M.D.

WASHINGTON, D. C.

* Such illusions I attribute to the cellular construction of the corpus vitreum, and it is an established fact that persons suffering from ascarides are subject to such queer scintillations. Another case of this kind, beside the writer's experience, is recorded in the *Medical News and Library*, Dec., 1874.

CONTRIBUTIONS FROM THE CHEMICAL LABORATORY, UNIVERSITY OF MICHIGAN.

Composition of Secret Mixtures.

1.—"*Condition Powder for Horses.*"

The principal ingredients were: Fenugreek, licorice root, rosin, brimstone, common salt, nitrate of potash, and a green powder, probably senna. It contained traces of calcium and magnesium carbonates; silica, iron, alumina.

2.—"*Fumigator for Hen-coops.*"

Consisted wholly of coal tar.

3.—"*Mixture for Clarifying Cider.*"

Half-changed cider, containg 4 per cent commercial gelatin. The gelatin was partially coagulated by the alcohol in the cider.

4.—"*Commercial Carbonate of Zinc.*"

Entirely precipitated sulphate of calcium, containing a trace of alumina.

5.—"*Radway's Renovating Resolvent.*"

This may be very closely imitated by the following prescription:—

Take of

Potassic iodide	40 gr.
Fl. ex. sarsaparilla	4 fl.dr.
Essence of bitter almonds	2½ fl.dr.
Simple syrup	1 fl.oz.
Simple elixir (Parrish's)	3 fl.oz.
Distilled water, to make	8 fl.oz.
Caramel, q.s. to color.	Mix.

6.—"*For Lung Diseases,*" to be used with an atomizer. Tincture of tolu, diluted as much as possible with water.

7.—*Patent* "*Baby Food.*"

Wheat starch and milk-sugar. Put up in bottles holding about 2 tr. oz. Sold at 50 cents.

8.—"*For Disinfecting Purposes.*"

Consisted wholly of ammonium nitrate crystals, dusted over with with ferric oxide (rouge

or colcothar). The directions were to place a small quantity on a hot shovel, or on coals. It is rather difficult to see much value in this powder. Nitrous oxide would probably be the chief product of the decomposition, although other nitrogen oxides might be liberated in small amounts.

Analyses 1 to 5, inclusive, were made by the undersigned, 6 and 7 by Prof. V. C. Vaughn, of this laboratory, and 8 by Mr. Hugo Thum, of the Senior Pharmacy Class.

HENRY B. PARSONS.

Chemical Laboratory, Univ. of Mich.,
ANN ARBOR, Mich., Feb. 9th, 1878.

Cod-Liver Oil.

MR. L. MONRAD KROHN, apothecary in Bergen (Norway), who has been for many years a dealer in cod-liver oil at the most important market in Northern Europe, furnishes the following interesting information to the *Pharmaceutische Handelsblatt* (*No.* 105):

Properly speaking, the shore of Norway is not rich in fish. The immense extent of coast, however, and the extent of the surrounding ocean, bring it about that the thinly-scattered population obtains a larger harvest of fish than might be expected, especially at particular seasons of the year.

During spring, summer, and autumn the catch of herrings of different kinds and sizes, and during winter the haul of dorsch, is exceedingly large. The latter (also known as skrei, cabillau, *Gadus morrhuus*, Linn.) occurs during January and February along the coast near Bergen and northwards, particularly about Sindmer and Romsdalen, where in one season between six and eight millions of fish are usually taken. Sometimes during the same months, but generally later, the catch begins at the Lofoden islands (67–69° N. Lat.) with a very high average yield. For instance, during last winter no less than 24 millions of fish were taken. Later still begins the catch in Finnmarken, where it is often as abundant as at the Lofoden islands. The yield during last winter, however, amounted to only 10 millions.

In order to properly understand the manufacture of the various products obtained from these fish, it is important to remember that the fisheries extend for a distance of nearly 200 geographical miles, in the midst of winter, the days being very short and the weather rainy or stormy, and often snowy and cold. The fishermen do not reside near their fishing grounds, but assemble in large numbers at the latter (as many as 16,000 sometimes at the Lofoden islands); nor are there any accommodations to be had for housing the men on shore any more than for storing or properly manipulating the captured fish.

As soon as caught, the dorsch are brought on shore, cleaned, their livers, roes, and intestines removed, and either sold to dealers or manufacturers, or utilized by the fishermen themselves for the preparation of the oil. There are five grades of the latter:

1. Steam-tried cod-liver oil,
   Oleum jecoris album vapore paratum.
2. Ordinary medicinal cod-liver oil,
   Oleum jecoris flavum.
3. Light-yellow cod-liver oil.
4. Light-brown cod-liver oil.
   Oleum jecoris flavum fuscum, for medicinal and industrial purposes.
5. Brown tanner's oil.

The method of manufacturing the first of the above grades is in principle the same everywhere. The livers are delivered at the factory as fresh as possible, as they are liable, in common with all oily bodies, to become rancid on exposure to air. They are placed into large tinned-iron kettles, exposed to direct or indirect steam-heat, and the exuding oil is removed into closed receptacles as speedily as possible. It was customary, formerly, to pass the oil through linen, woollen, or other filters (a custom which still prevails in Scotland and some parts of North America), but this practice has been abandoned, the oil being transferred, while still warm, into *leaden* tanks, where the stearin and accidental impurities (shreds of liver, etc.) are gradually deposited. Treated in this manner the oil is much less prone to become rancid than when passed through filters. According as the livers have been exposed to more or less heat and pressure, the quantity of stearin contained in it varies in proportion. After having stood at rest one or two months, the oil is drawn off clear. At this time, however, the temperature is of great importance. If it be drawn off at 4° C. (39.2° F.) it will not deposit any stearin when cooling down to this point; while if it be drawn at 12° C. (53.6° F.) it will certainly do so if exposed afterwards to a colder temperature. Whether an excess of stearin in cod-liver oil diminishes its medicinal value, is a question which need not be discussed here, but it certainly makes a considerable difference to the manufacturer as well as to the dealer, whether he sells oil nearly deprived of stearin, or such as contains notable quantities of it. A good deal of the variation in price of otherwise fine cod-liver oil depends upon this difference. The above method was introduced by P. Möller; but as it is so simple and used by all manufacturers, it makes no difference whether the oil be obtained from Möller himself or from other large firms, as H. Meyer, Ibenfeldt, F. Hausen, or others.

Accidental circumstances will sometimes furnish to one or the other manufacturer the freshest livers, and therefore yield the freshest oil. Generally the factories are situated near the established fishing grounds. The propri-

etors make contracts with the fishermen for a supply of fish, and it may sometimes happen that the yield of a haul is too small, and has to be kept until supplemented by a second supply before it is worth while to begin operations, thereby endangering the quality of the product.

The name of the manufacturer is no criterion whatever as to the quality of the oil; it is necessary to judge from the oil itself. The best is made upon Sindmer, in the Lofoden islands, and in Finnmarken; the latter, however, generally requires a second clarifying process before being as handsome as the other.

The price of the oil depends in the first place upon the proportion of the stearin it contains, and in the second place upon the yield of the season. In some years the harvest is everywhere abundant, in other years stormy weather may interfere with fishing operations, and besides the Newfoundland fisheries exercise a considerable influence upon the price. In seasons where the yield of the latter fishing grounds is below the average, England, France, and America draw large supplies of cod-liver oil from Norway, and often cause a rise of the price by 50 per cent.

The second grade of cod-liver oil is that prepared by the old method: namely, by allowing the livers to stand in the cold, whereby the oil exudes spontaneously. Owing, however, to the long exposure to air, this oil has a more fishy odor, and a coarser taste than the first quality. Still it may be obtained of good color and agreeable taste by keeping the livers in new oaken tubs, and removing the oil as soon as separated. Unfortunately, the methods of manufacture and the appliances vary greatly; sometimes the livers are placed into wooden tubs, which have been used for years for the same purpose, and is moreover often drawn off into casks lined with paraffin or tar, whereby it acquires a most disgusting odor or taste. There is no remedy for this drawback as long as this quality of oil is inquired for upon the drug market at an advance, over the most ordinary oil, of only 1 or 2 thalers per ton of about 1,000 kilos.

Producers receive the same price at the spot for the first grade of oil as for the second; foreign purchasers, however, are compelled to buy the finer oil from the commission dealers at a slightly advanced price. In general, the price of good cod-liver oil depends upon the general oil market. Whenever there is a scarcity of rasp, or olive-oil or of seal-blubber, cod-liver oil takes their place. With an abundance of other oils, the price of cod-liver oil falls. It is said that as much as 1,500,000 kilos (about 3,275,000 lbs.) of this grade of oil are used annually for medicinal purposes.

The next grade of oil, which exudes from the livers by long standing or by fermentation, is mostly used for technical purposes, as in soap, candle, and chamois-leather factories.

Sometimes the purchasers of the livers do not have time to try out the oil, from one cause or another; and in this case the livers are left in the vats where they have been first thrown. Fermentation then sets in, and the oil, when afterwards removed, has a browner color, but a still palatable taste. This is the so-called Oleum jecoris flavum fuscum (light-brown cod-liver oil), the fourth grade, of which a good deal is exported to France, and which is the kind introduced by Dr. de Jongh, who was the first to make the traffic in cod-liver oil a personal lucrative undertaking. He purchases his oil, like other houses, allows it to clarify thoroughly, fills it into bottles, and charges a very handsome price. Of this quality 11,000,000 kilos were exported from Bergen in 1877; how much of it was used for medicinal purposes exclusively, it is impossible to say.

After the livers have been treated by one or the other methods, as detailed above, the residues are more or less roasted in large iron kettles and then expressed. A thick, pyroligneous, greenish-brown to black oil is thereby obtained, being the fifth and last grade, which is used for tanning purposes.

The exports from Bergen during 1877 amounted to about 1,700 tons of the first and second grade, 1,400 tons of the third, 1,100 tons of the fourth, and 3,600 tons of the fifth.

Adulterations of cod-liver oil in Norway are unheard of, and besides are entirely uncalled for, as the price of fish oils is so much inferior to other animal or to vegetable oils. The only foreign admixtures likely to occur are impurities from careless manufacture, as animal tissues (from the liver, etc.) and water. The oils obtained from other fish, although occurring in the market, are obtainable only in limited quantities and at prices equal to that of cod-liver oil, so as to make the substitution for cod-liver oil unprofitable.

Only in the case of the first grade of cod-liver oil, Oleum jecoris album, is it necessary to be cautious, not on account of adulteration, but of accidental substitution. During the dorsch season, but more particularly after its conclusion, at the coast of Finnmarken, large quantities of the so-called hoakjarring (Seymnus borealis) a large fish, 12 to 15 feet long are caught. The liver of a single fish yields from 230 to 350 lbs. of oil, and since a fishing-boat may return, after an absence of 2 or 3 days, with about 2 tons of liver, it is evident that a profuse supply of this oil may be placed upon the market. A good deal of this is now offered for sale, and, being bright and clear, nearly free from stearin, and cheaper than genuine cod-liver oil, it is often palmed off upon ignorant purchasers. This oil has mostly an acid reaction, a peculiar disagreeable odor, and is very difficult to digest. Purchasers who are unacquainted with this oil, and who only look to external appearance and low price, may easily be imposed upon.

EXPLOSIVE MIXTURES.

EDITORS OF NEW REMEDIES:

TWICE have I witnessed the phenomenon mentioned on pages 27 and 47 of the current volume of NEW REMEDIES: several years since, when engaged in the drug business, and recently in the course of my practice. The first occurrence was while compounding a liniment for a customer, in which several oils, a quantity of glycerine, and an acid (either nitric or sulphuric) were being mixed. I was about to put in the cork when there was a slight explosion, and the contents of the bottle shot up to the ceiling like a flash, the flame being of a bluish tint. The bottle remained in my hand empty.

The second was as follows: Having occasion to use some nitric acid (C. P.), I poured a few drops into an empty and apparently perfectly clean three-drachm case-vial, put it into my vest-pocket, and started out to make a call, when I heard an explosion, and a sensation as if I had been shot. The report was as loud as that of a small revolver. As I had been in practice but a short time, I thought no one would shoot me for money or revenge, and not falling, I concluded to investigate, when I found the top off my bottle and my clothing badly discolored by the acid. I afterwards learned there had been some glycerine in the vial. Respectfully,

R. S. HARNDEN, M.D.

WAVERLY, N. Y., February 20th, 1878.

HOW TO DETERMINE SPECIFIC GRAVITY.

WE have a query from a correspondent who has but a limited experience in pharmacy, but who desires to work out many of the preparations of the U. S. Pharmacopœia for himself. He wishes to know if he can ascertain the specific gravities of acids, alcohols and other liquids without having to buy expensive apparatus. His case is so likely to be similiar to many others, that we give the following directions for their benefit:

If you are really determined to work carefully, you cannot do better than to begin early to control all your operations and results. There is no absolute need of special apparatus—except perhaps convenience—to determine specific gravity. Select a glass-stoppered bottle, having a gradually sloping, not sudden neck, with a stopper fitting accurately, and leaving, if possible, no groove between it and the neck. Counterpoise this bottle by another, lighter one, into which tin-foil or grains of sand are introduced sufficient to exactly counterbalance it. The latter bottle is then, under all circumstances, the exact tare of the other, while empty. Now fill the first bottle (the specific gravity bottle) with distilled water—if possible at 60° F.—to the brim, insert the stopper by sliding it in rather suddenly, and when it sits firmly in the neck, carefully wipe off all water, which has run down on the outside, being particular to dry the space between neck and stopper. Place the bottle on a good balance, put the counterpoise (the other bottle) on the other pan and add enough weights to exactly restore the equilibrium. Supposing you had to add 640 grains. Then your specific gravity bottle holds exactly 640 grains of distilled water at 60° F. Repeat this experiment a few times, to make sure that you are correct, and then you may once for all assume that your spec. grav. bottle represents just 640 grains of pure water at 60° F. If you now wish to take the specific gravity of any other liquid, you will first take care to have your bottle perfectly clean and dry. If it had been used immediately before—say for an aqueous liquid, you rinse it out thoroughly with water, then with alcohol, and finally with ether, and then dry it by warming a few minutes. In this way you will be able to get it dry much quicker than in any other. As soon as it has become sufficiently cold again, fill it with the liquid at 60°F. to be weighed, up to the brim, insert the stopper quickly, until it catches firmly in the neck and carefully wash off or wipe off the liquid which has overflown, being again particular to remove that which has remained between stopper and neck. Place the bottle on one side of the balance, the counterpoise on the other, and add weights until the equilibrium is restored. Supposing you had to add 736 grains in this case, then you would say: as 640 grains of distilled water (at 60°F.), is to 736 grains of this liquid (at 60°F.), so is 1,000 (the assumed specific gravity of water) to x (the desired specific gravity of the liquid under examination), or:

640 : 736 = 1,000 : x

To solve this proportion, you multiply the two inner members, and divide by the other:

736 × 1,000 = 736,000, and

736,000 : 640 = 1,150.

This last number, then, represents the specific gravity of the liquid.

Having once for all determined the exact capacity of your bottle, you may considerably abbreviate the calculation in any given case, by finding the constant figure expressing the relation between the ascertained capacity and the figure 1,000. You will notice, that in the proportion

640 : 736 = 1,000 : x

the first, third, and fourth members will remain the same in all cases, the only variation occurring at the place of the second member, which represents the weight of any given liquid introduced into your bottle. Now instead of multiplying the second and third members and dividing with the outer, you may at once divide the third member (1,000) by the first (640), and the quotient will be the figure sought. In the present case 1,000 ÷ 640 = 1.5625, and this may be called the *modulus* of your specific gravity bottle. Then, in taking the spec. grav. of any liquid, you only need to multiply the weight of the contents

of your bottle with the modulus 1.5625, and the product will be the specific gravity:

$736 \times 1.5625 = 1{,}150$.

RECENT PAPERS.

American Journal of Pharmacy. January.

R. V. MATTISON: "Solution of Dialyzed Iron as an Antidote for Arsenical Poisoning." [The author finds, 1. That dialyzed iron, to be of value as an antidote for arsenic, must first be precipitated by the action of some neutral salt; 2. That this precipitation and the consequent production of ferric hydrate is accomplished when this preparation is taken into the stomach; 3. That, therefore, the solution of dialyzed iron is a valuable antidote for arsenical poisoning, and should be administered promptly in cases of emergency, followed by an emetic, until more efficient remedies can be used; 4. In order to guard against the failure of the precipitation of the dialyzed iron in the stomach, through some defect in the secretion of gastric juice, a teaspoonful or more of *sodium chloride* should be administered immediately afterward. A case of poisoning by arsenic has lately occurred in Philadelphia which was successfully treated by dialyzed iron, in doses of 2 fl. ʒ diluted with water. No emetic was administered in this case.]

H. BETZ: "Oil of Hempseed." [Hempseed, or the fruit of *Cannabis sativa* L., yields by expression 15–18 per cent of sweetish deep-green fixed oil, boiling at 550° F. and having a spec. grav. of 0.9319.]

J. M. MAISCH: "The useful Species of Viburnum." [*Viburnum ovatum* Walt., black haw, hab. Southern U.S. The bark has a bitter taste, which is, however, much more intense in the leaves.—*Viburnum prunifolium* L., black haw, originally recommended in 1867 by Dr. Phares, of Newtonia, Miss., as particularly useful in preventing abortion and miscarriage, and generally possessing antispasmodic, tonic, astringent, and diuretic properties.—*Viburnum Opulus* L., high cranberry, or cranberry tree; the flowers and the bark, known as cramp bark, were formerly employed for their supposed alterative and antispasmodic properties.—These and other American and exotic species all contain bitter principles. In some parts of the U. S. one or two species are used as antiperiodics in place of quinia.]

H. TRIMBLE: "Some Analyses of Dialyzed Iron." [The author examined six samples of dialyzed iron, all of which were stated by the manufacturers to contain 5 per cent of ferric oxychloride, or, as one asserts, of ferric oxide free from hydric chloride. He found them to contain from 2.394 (lowest) to 4.677 (highest) of ferric oxide (Fe_2O_3).]

H. BETZ: "Sapo Viridis." [In countries where hemp-seed oil is a common article of commerce, green soap is usually made from this oil, and is obtained of a nice dark-green color. As this is not easily to be had in this country, and is rather expensive, linseed oil may be used instead. In making it, two points have to be taken into consideration: 1. the color; this green color is one of the most difficult to obtain from vegetables. The author obtained the best results by using the green precipitate obtained by precipitating a solution of indigo with lime; 2, the odor, which is very disagreeable, but may be overcome by an essential oil; for instance, oil of citronella. The formula will be found on page 92.]

Berichte d. Deutsch. Chem. Gesellschaft. 1877, No. 19, and 1878, No. 1.

MAX KRETZSCHMAR: "On Butter-Analysis." [The author has made a critical investigation of *Hehner* and *Angell's* butter-analysis (described in our last number, p. 49), and finds that the percentage of insoluble fatty acids in natural butter, which these chemists had found to be between 85.4 and 87.5 (maximum) per cent, is occasionally much higher, he having examined authentic samples which contained as high as 89.6 per cent. According to J. Bell, the amount of these insoluble fatty acids in butter is between 85.5 and 89.8 per cent. Nevertheless, all other fats which could be used as an adulteration or substitution for butter, yield numbers which are a good deal higher. Lard was found to contain 95.5 to 95.8 per cent; oleomargarine contained 95.1 to 95.5 per cent; castor-oil contains 95.9 per cent. As an interesting fact the author adds that human fat contains 95.2–95.4 per cent of insoluble fatty acids.]

V. MERTZ AND J. TIBICIRA: "New Formation of Formic Acid." [According to Berthelot, potassium formate may be produced by heating carbon monoxide (CO) and moist potassic hydrate in a closed tube for seventy hours in the water-bath. The authors have found that, by passing carbon monoxide over soda-lime, heated to 200–250° C, the reaction takes place much more rapidly. This reaction forms a very instructive experiment to illustrate the generation of an *organic* compound from *inorganic* material. The process is adapted to the preparation of formic acid on the large scale.]

O. HESSE: "The Alkaloid in Pereiro Bark." [The bark of Pereiro-Bark, or Pao-Pereiro* (also called *Pignaciba* or *Canudo amargoso*), which is reputed to be an efficient febrifuge in Brazil, contains an alkaloid discovered many years ago by Correa dos Santos. Peckolt, who identified the tree as *Geissospermum Vellosii* (better *Geissospermum laeve*, according to Baillon), proposes to change the original name of the alkaloid, pereirine into geissospermine. Hesse now finds that there are two alkaloids in the bark—one, which may receive the name geissospermine, crystallizable, and having the composition $C_{19}H_{24}N_2O_2$ (differing only by C_1 from that of quinia); and another amorphous alkaloid, which should retain the name pereirine, and is present in greater abundance than the other.]

Journal of the Chemical Society.

M. M. PATTISON MUIR: "Volumetric Estimation of Bismuth." [Showing that bismuth may be determined volumetrically as phosphate, by titrating a solution of bismuth, free from other metals except alkalies, in *nitric* acid, to which a measured quantity of sodium phosphate solution has been added, with a standard solution of uranium acetate. Some sodium acetate must be previously added, in order to absorb the nitric acid of the bismuth with liberation of acetic acid.]

R. V. TUSON AND EDM. NEISON: "Volumetric Estimation of Mercury." [Mercury may be accurately determined—provided no ammoniacal salts be present—by titrating the solution of any mercuric salt with a solution of cyanide of potassium (17 gm. to litre), previously standardized with a solution of mercuric chloride (13.55 gm. to litre). A few drops of dilute ammonia are first added to the mercuric solution to be tested, as an indicator, and the sudden disappearance of the opalescence caused by the addition of the ammonia, indicates the end of the reaction.]

CH. T. KINGZETT: "Chemistry of Cacao Butter." [The author has separated from cacao butter a new fatty acid, which he calls *theobromic acid*, and which has its melting point at about 72.2° C. (162° F.).]

Journal de Pharmacie d'Anvers. January.

DR. C. PAVESI: "Salicylic Sulphite of Sodium." [The author proposes to employ a compound of salicylic acid and sulphite of sodium in such affections where the use of either remedy would be indicated, chiefly for the reason that the resulting compound appears to be more soluble than either substance by itself, and because the salicylic acid retards the decomposition of the sulphite. To prepare it, he directs to dissolve 1 part of salicylic acid and 2 parts of sodium sulphite in a sufficient quantity of water raised to the temperature of 50–60°C (122–140°F.). On cooling, the compound (or rather mixture) crystallizes out, having an opal-blue tint, and possessing the tastes of both constituents. The crystals are very soluble in water.]

L'Union Pharmaceutique. No. 1.

H. BYASSON: "On Maté." [To supplement the infor-

* This is the correct spelling of this word; not Pao-Pereira, as it is generally written.

mation given in our January number, p. 1 sqq., on this substance, we abstract from the article of the author the following: The tree (*Ilex Paraguariensis*) bears the native name *Arvore do Cogonha*. There are three sorts of tea distinguished, each made from a peculiar variety of maté: 1. *Caa-cuys* (*caa* signifies "leaf"), prepared from the scarcely opened buds; 2. *Caa-miri*, prepared by the Jesuits from the dried, garbled, and carefully-powdered leaves; and *Caa-gazu*, prepared by the natives from roasted and coarsely-powdered leaves.]

Repertoire de Pharmacie, 1878, 1.

THE IMPORTATION OF FOREIGN DRUGS INTO FRANCE. [The laws of France forbid the importation of foreign compound drugs except the following: 1. distilled waters, whether they contain alcohol or not; 2. extract of cinchona. These two are admitted on payment of certain duties of import, without other restriction. 3. All foreign compound remedies which have been officially declared by the High School of Pharmacy (Ecole supréieure de Pharmacie) as *necessary* or useful; and then only on payment of certain duties. These laws have for a long time been objectionable to French pharmacists, but owing to the protectionary tendencies of the former régime, they have been unsuccessful in causing their abolition. A movement is going on at present, which promises to have better success, to have these restrictions removed. The demands of French pharmacists, which have been laid before government, are withal very moderate and reasonable, being comprised in these two paragraphs:

1. The prohibition laid by the law of 1817 upon the importation of compound drugs of foreign origin, does not apply to such as are imported by a regular pharmacist. All medicines admitted under this clause are subject to a duty of import of 10 per cent ad valorem; the commercial value to be determined by the School of Pharmacy.

2. The sale of foreign compound medicines in France is subject to the same conditions as the sale of similar products of domestic origin.]

Wiener Akadem. Ber. 74. 389.

G. GOLDSMITH and H. WEIDEL: "On Quassin." [The bark and wood of *Quassia amara* L. yield, when extracted with water, a yellow resinous body, from which the crystalline compound described by Winkler, and more recently by Wiggers, could not be obtained. The résin darkens in color on exposure to the air. It is split up into acetic and protocatechuic acids by fusion with caustic potash.]

La Gaceta Scientifica de Venezuela 1878. 4–5.

M. M. PONTE: "Yuca." [The author gives a very full account of the Cassava or Manioc plant, *Jatropha Manihot* Plum. (*Jatropha Manihot* L., *Janipha Manihot* K., *Manihot edule* A. Rich., *Jatropha stipulata* Vulloz, *Manihot utilissima* Polh.). In Brazil no less than fourteen varieties or species of yuca are cultivated; in Venezuela only two: the sweet and the bitter. The *bitter cassava* is particularly distinguished by its dark-yellow stem, its bitter, acrid, and poisonous juice, the orange-colored veins of the leaves, and the pale-yellow flowers. Its native names are *Yuca* (Venezuela), *Mandiuca* (Colombia), *Jatrofa* (Mexico), *Macacheira* or *Mandioca* (Brazil), *Camanioc*, *Aypi* or *Mandiiba*, *Maniba*, *Macajera*, *Cuaca* (in other parts of South America). The *sweet* variety (*Manihot Aipi* Plan., *Janipha Loeffingii*, H. B.) is distinguished by having a dark-reddish stem and roots, exuding a whitish, non-poisonous juice, and reddish flowers.]

Pharmaceutical Journal and Transactions. Nos. 395–399.

W. H. D. LEWIS: "*Lobelia inflata*; its Proximate Principles." [The author essayed to prepare the alkaloid lobelina by the processes proposed by various investigators, without, however, getting entirely rid of the coloring matter. He found the best process to be the following: The powdered drug is mixed with purified animal charcoal, and, after moistening with water, to which a little acetic acid has been added, it is packed in a percolator, and allowed to macerate for a few days. More menstruum is then poured on, and the percolation continued until the drug is deprived of bitterness. The solution being evaporated, the residuary extract is triturated with magnesia in excess, and the filtered liquid agitated with amylic alcohol, which is decanted and allowed to evaporate spontaneously. The lobelina may be further purified by dissolving it in water, and filtering through animal charcoal. The latter retains the alkaloid, which may be dissolved out by ether or amylic alcohol. Lobelina thus prepared has the consistence of honey, is of a light-yellow color, lighter than water, dissolves in water, alcohol, chloroform, ether, benzole, carbon disulphide, amylic alcohol, fixed and volatile oils, etc., and forms crystallizable salts with acids, except acetic. Lobelic acid, which the author likewise prepared, exists in the plant in combination with lobelina.]

E. M. HOLMES: "Notes on the Medicinal Plants of Liberia." [*Ocymum viride* Willd. 'Fever-plant.' Commonly used as a remedy for fever of any kind, being used as a reliable substitute for quinia. It is given in form of an infusion, a wineglassful being administered at intervals until perspiration is freely induced, the patient being kept in bed. Perhaps its medicinal properties may be referred to the presence of thymol.—*Aspilia latifolia*, O. and H. 'Hæmorrhage' plant. Dr. Roberts, the nephew of the late president of Liberia, gives accounts of the hæmostatic properties of this plant, which partake of the marvellous. He states 'that the natives always prefer it to any treatment adopted by the Europeans.' He further says 'that he has witnessed its use in several cases where arteries had been severed, the leaves and flowers being pounded together and applied to the wound, when the hæmorrhage would stop in a few minutes, and the wound would heal rapidly without any other application.' The properties of this plant certainly are worth investigation, so that it may be determined whether its action is merely mechanical, like that of matico, or whether its juice, like that of *Jatropha Curcas* L., possesses an inherent property of coagulating the fibrin of the blood.]

Die Natur. 1878, No. 4.

"Use of Tobacco Smoke in Asphyxia." [A French physician living in Algiers relates the case of a girl, who had been asphyxiated in a room filled with carbonic acid gas. All other means of restoring life having failed, he bethought himself of the pipe which he brought with him burning and blew some of the smoke into her mouth, with considerable force. In a few moments she made spasmodic efforts to breathe and was saved. The smoke had not penetrated into the larynx, but had probably only caused an irritation of the Schneiderian membrane, which was transmitted to the paralyzed motor-nerves of the muscles and thereby re-established respiration.]

Physic Mass.—Messrs. Elliman & Co., of Slough, have published in the *Pharmaceutical Journal* the following formula for a physic mass, which is plastic, ductile, and soluble:—Take of

	Lbs.
Best Barbadoes aloes	10
Glycerine	1
Castor oil	1
Powdered unbleached ginger	½

Dissolve the aloes in the glycerine by means of a water-bath, then add the castor oil, and lastly stir in the ginger previously resifted through a coarse sieve. When operating upon 50 pounds of aloes, they have found that it would dissolve in 5 pounds of glycerine in about one and a half hours, so that the mass of over 60 pounds could be made in a little more than two hours. This mass, however, like most others, when made into balls will not retain its cylindrical form. Messrs. Elliman have, therefore, adopted the plan of using cardboard cases, like marking-ink cases, into which the balls, wrapped in waxed paper, are dropped as soon as made.

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MEDICINAL PLANTS; Being Descriptions with Original Figures of the Principal Plants employed in Medicine, and an Account of their Properties and Uses. BY ROBERT BENTLEY, F.L.S., and HENRY TRIMEN, M.B., F.L.S. Philadelphia: Lindsay & Blakiston. 1877. Price, $2 per part.

THE following is the contents of the parts of this work just published on this side of the Atlantic.

PART 23.—Black cohosh (*Cimicifuga racemosa*), a plant better known in this country than it is abroad; Balsamo (*Toluifera balsamum*), a native of Venezuela and New Grenada and the source of the Tolu balsam; German pellitory (*Anacyclus officinarum*), used in place of the officinal pellitory; Karyat (*Andrographis paniculata*), a native of Ceylon, where the root is used as a bitter tonic; Sesamé (*Sesamum indicum*) (See U. S. Phar.); Indian hemp (*Cannabis sativa*); Arrowroot (*Maranta arundinacea*).

PART 24.—Bonduc (*Cæsalpinia bonducella*), an Indian drug of which the seeds are used as tonic and antiperiodic; Indian Pennywort (*Hydrocotyle asiatica*), an inhabitant of the tropics and possessing tonic and alterative powers; Persian asafœtida (*Ferula scorodosma*); Kiachta rhubarb (*Rheum palmatum*); Boldo (*Peumus Boldus*). See NEW REM. Vol. iii., pp. 43 and 165; *Euphorbia resinifera*, an inhabitant of Morocco, the product—gum euphorbium—being an emetic and purgative and externally a vesicating agent; Cardamom (*Elettaria cardamomum*). See NEW REM., Vol. vi., p. 354.

PART 25.—Yellow Puccoon (*Hydrastis canadensis*), another essentially American drug; Gold-thread (*Coptis trifolia*); Sumlu (*Berberis aristata*), the Indian Bayberry; Gunja, or Indian licorice (*Abrus precatorius*); Purging cassia (*Cassia fistula*); *Alstonia scholaris*, the source of Dita bark, described on page 146 of Vol. v. NEW REM.; Mudar (*Calotropis procera*), the bark, in India, is used as a tonic, alterative, and diaphoretic.

CONSIDERACIONES SOBRE EL USO DEL ACEITE DE ALGODON en la Economia Humana, by D. RAMON CODINA LANGLIN, Ph.D. 2d edition. Barcelona, pp. 34, 12mo. Published by the author.

ON THE RECOGNITION AND MANAGEMENT OF THE GOUTY STATE IN DISEASES OF THE SKIN, by L. DUNCAN BULKLEY, M.D. Reprinted from the *American Practitioner*. 8vo, pp. 25.

ARE ECZEMA AND PSORIASIS LOCAL DISEASES OF THE SKIN, or are they Manifestations of Constitutional Disorders? By L. DUNCAN BULKLEY, A.M., M.D. Extracted from the Transactions of the International Medical Congress. 8vo. pp. 19. Privately published.

BEITRAEGE ZUR CHEMIE DER WICHTIGERN GUMMIHARZE, HARZE UND BALSAME by ED. HIRSCHSOHN. 8vo. Dorpat, 1877.

WERTHBESTIMMUNG DES WISMUTHS UND DES KAEUFLICHEN MAGISTERIUM BISMUTHI, by JUL. LOEWY. Dorpat. [The two last-mentioned pamphlets are from Prof. Dragendorff, of Dorpat.]

NEW BOOKS.

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Gazzuola (Ferd.) Dizionario di Botanica applicata alla medicina, alla farmacia, alla veterinaria, etc. Pisa 1877. pp. 720. 16mo. $8.00 gold.

Stahl's Grosses Illustrirtes Kräuterbuch. In numbers. Neu-Ulm. 8vo. Numb. 1–7. 50 Pfen. each.

Thorpe (T. E). A Series of Chemical Problems for use in Colleges and Schools. 5th ed. London, 1877. 18mo. *1s. 6d.*

Douglas (S. H.) and Prescott (A. B.). Qualitative Chemical Analysis; a guide in the practical study of Chemistry and in the Work of Analysis. 2d ed. N. Y. pp. 254. 8vo.

Waldenburg (L.) and Simon (C. Ed.). Handbuch der allgemeinen und speciellen Arzneiverordnungslehre. Auf Grundlage der Pharm. Germ. bearbeitet. 9th ed. Berlin. 8vo. pp. 862. 20 mark.

Beasley (H.). The Pocket Formulary and Synopsis of the Brit. and Foreign Pharmacopœias. 10th ed. 18mo. *6s. 6d.*

Staedel (Dr. Wm.). Jahresbericht über die Fortschritte auf dem Gebiete der reinen Chemie. 4th year. 1876. Tübingen, 1877. $4.40.

Mueller (Baron Ferd. von), the distinguished Australian Botanist, will soon publish a magnificent Atlas of Eucalypti; also an English edition of G. C. Wittstein's treatise on the Analysis of the Ashes of Plants.

Roth (Emil). Die Weinbereitung und Weinchemie in ihrer Theorie und Praxis. 2 vols. Heidelberg, 1877–78. Mark 8.20.

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Fors y Cornet (Dr.). Tratado de Farmacia operatoria. 2 vols. pp. 2,300, with 363 illust. Barcelona, 1877. Pes. 50.

Kekule (Prof. Aug). Die wissenschaftlichen Ziele und Leistungen der Chemie. 8vo. Bonn, 1877. 29 pp. $0.40 gold.

Vohlhard (Prof. Dr. J.). Die Silbertitrirung mit Schwefelcyanammonium, und deren Anwendung zur Bestimmung des Kupfers, Quecksilbers und der Halogene. 8vo. Leipzig, 1877. 62 pp. $0.55 gold.

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Troquart (Dr.) Contributions à l'étude de l'action physiologique du chloral sur la circulation et la respiration. 8vo. Avec figures. J. B. Baillière and Son. Paris. 3 francs.

Neubauer et Vogel. De l'urine et des sediments urinaires, traduit par le Docteur L. Gautier. 8vo. pp. 520. Avec 4 planches. F. Savy, Paris.

To Clean Paint.—An ounce of pulverized borax, a a pound of best brown soap in small pieces and three quarts of water are to be mixed and put on the fire. It should simmer until the soap dissolves, being frequently stirred. Do not allow it to boil. Use with flannel and rinse off as soon as the paint is clean. This mixture is also recommended for washing clothes.

ANALYSES OF PHARMACEUTICAL CHEMICALS AND PREPARATIONS.

We are now prepared to send samples for the May prize to such as may desire to compete for it. Answers must be received before the 20th of April, and be accompanied by a sealed envelope containing the name of the writer, and designated by a device or motto, which is also to be placed, instead of the writer's name, upon the report of the analysis.

Persons to whom a prize has been awarded are requested to send to the publishers the title of any book or books they may desire, not exceeding in the aggregate the value of $10.00.

The prize this month is awarded to H. KOPF, *with* A. W. WEISMAN, *cor. Broome and Orchard Streets, New York City* (" *Verte* ").

THE March sample contained 85 per cent of morphia sulphate ($(C_{17}H_{19}NO_3)_2H_2SO_4 . 5H_2O$), and 15 per cent of quinia sulphate ($(C_{20}H_{24}N_2O_2)_2.H_2SO_4 . 7\frac{1}{2}H_2O$).

The sending of the present sample was suggested by a very serious mistake made by a drug clerk, viz.: filling a prescription for " quiniæ sulphas " by " morphiæ sulphas." The same blunder has often been made before, and, owing to the very close resemblance of the two salts, may be made many times in the future. To be acquainted with the best and simplest methods of distinguishing the two salts becomes the duty of every druggist and prescription clerk. In matters where the life of a patient is involved, ignorance is criminal.

Let us now take samples of commercially pure sulphates of quinia and morphia and notice some differences in their behavior with reagents.

I. *Preliminary Tests.*—Both have about the same appearance and are not easily distinguished by aid of a lens. Heated on platinum foil, both melt, char, and finally burn away, leaving no residue. Gently heated in a closed tube, both salts give off water of crystallization; at a higher heat, both char and slowly burn away. Heated in a closed tube, with a volatile organic acid (benzoic or salicylic will answer) the characteristic purple vapors given by all cinchona alkaloids are evolved with quinia sulphate; morphia sulphate does not give this reaction. (Grahe's Test: N. R. VI., p. 251). Morphia sulphate is freely soluble in water; quinia sulphate requires from 700 to 740 parts of cold water, but is made freely soluble by addition of small amounts of sulphuric, hydrochloric or acetic acids. Quinia solutions are fluorescent; morphia solutions are not.

II. *Direct Tests.*—Applied to the salts in dry state.

1. A minute amount of morphia or its salts, treated in an evaporating dish, with freshly-prepared chlorine water, evaporated carefully to dryness on a water-bath, and then treated with a few drops of ammonia, gives a *brown* residue; with quinia, a *green* residue, obscured by presence of much morphia, as in the sample for this month.

2. With concentrated nitric acid, morphia and its salts are colored " yellow to orange-red; the color is either not changed or is altered toward the yellow by stannous chloride." (Prescott's "*Prox. Org. Anal.*" p. 147.) Nitric acid produces no color with quinia or its salts.

3. Cold, concentrated, pure sulphuric acid produces no color with quinia or morphia salts. " Husemann's test for morphia: (N. R. Nov., 1877, p. 335), gives no color reaction with quinia. If morphia be heated for half an hour, on a water-bath, with *pure*, concentrated sulphuric acid, a faint *violet-red* color is developed. " If now (to the cooled solution) there be added a drop of nitric acid, or chlorine water, or solution of chlorinated soda or lime, or a fragment of potassium, chlorate or nitrate, there is produced a beautiful *blue*, to *violet-red* color, soon passing into a *dark-red*. The one-hundredth part of a milligramme enables this color to appear with distinctness." (Husemann's " Pflanzenstoffe " 1871), p. 124.)

4. Morphia is a much more energetic *reducing agent* than quinia. In powder, or in *concentrated* watery solution, it liberates iodine from iodic acid, changes potassic ferricyanide to ferrocyanide, and reduces silver, *black*, from its nitrate. The above reactions are promoted by a gentle heat, and are not given by quinia. The liberated iodine may be made more apparent by giving, with starch paste, the characteristic *blue* color, or, by dissolving in carbon disulphide or chloroform, with the well-known *purple* color. The reduction of ferricyanide to ferrocyanide may be shown by the production of a *blue precipitate*, with ferric salts. These reactions are not given by quinia or its salts.

It must be remembered that a large number of other substances, both organic and inorganic, will liberate iodine from iodic acid, reduce silver from its nitrate, and change potassic ferricyanide to ferrocyanide; for this reason, these reactions should not be considered as conclusive evidence of morphia, although when applied to an alkaloidal residue, they are very valuable confirmatory evidence.

5. Neutral (basic) solution of ferric chloride gives, with solid morphia, or concentrated water solutions of its salts, a *blue* color, tolerably delicate, but not distinctive. Very similar are the colors produced by " creosote " (impure), carbolic and salicylic acids, when in very dilute water solutions. Ferric salts give no color-reactions with quinia.

III. *Tests applied to solutions.*—The morphia sulphate to be dissolved in water, and the quinia sulphate by dilute acid.

1. Prove the presence of sulphuric, and the absence of other acids, by the usual tests.

2. Precipitates are given in moderately acid (sulphuric) solutions of morphia and quinia, as follows: by potassic mercuric iodide (Mayer's reagent), phosphomolybdic acid (Sonnenschein's reagent), potassio-cadmic iodide (Marme's reagent), tannic acid, iodine in potassic iodide. The above reactions do not distinguish between morphia and quinia; but in the case of the precipitate caused by phosphomolybdic acid with salts of morphia, one or two drops of ammonia dissolve the precipitate, forming a *blue solution*, while in the case of quinia the solution thus formed is *colorless*.

Alcoholic solution of picric acid precipitates quinia from dilute, strongly acid solutions. The acid used should be sulphuric, not hydrochloric. Morphia is precipitated only in neutral solutions.

3. Potassic, sodic or ammonic hydrates, added, not in excess, precipitate both quinia and morphia. Potassic and sodic hydrates in excess redissolve morphia; do not redissolve quinia; ammonic hydrate in excess redissolves quinia, not morphia.

4. Quinia is removed from solutions made alkaline by either potassic, sodic, or ammonic hydrates, by shaking with ether, chloroform, petroleum naphtha, or benzole—best by ether and chloroform; ether, naphtha and benzole remove only *traces* of morphia, and chloroform removes it but imperfectly.

Amylic alcohol (" Purified Fusel Oil," which leaves no residue upon evaporation, and is free from common alcohol) removes morphia very completely from alkaline solutions. None of the above-named solvents remove either quinia or morphia from solutions acidulated with sulphuric acid.

IV. 1. Applying the preliminary tests mentioned in I. to the March sample, we obtain evidence of a cinchona alkaloid by Grahe's test, and also see by the fluorescence of its acid solution that either quinia or quinidia sulphate is present. That the larger portion of the powder is morphia sulphate may be surmised from its ready solubility in water.

2. A small portion is now dissolved in alcohol, and equal amounts of this alcoholic solution are evaporated to dryness in five porcelain dishes; to these residues are applied tests 1 to 5 mentioned under II. In each case a good reaction for morphia may be obtained, if the tests are carefully made, but quinia would hardly be suspected present.

3. To another small portion add a little water, filter, and prove in the filtrate the presence of sulphuric acid, and of an alkaloid as in III. 2.

Dissolve the slight residue remaining on the filter by very dilute acid—not sulphuric—and test for sulphuric acid and alkaloids, as above. Also determine in this solution the presence of quinia, and absence of quinidia, as explained in the February article.

4. Dissolve about one grain of the sample by aid of dilute acid, make alkaline with potassic or ammonic hydrate, and shake with ether. Decant the ethereal solution, evaporate it to dryness, and apply direct tests for quinia. Shake the remaining alkaline solution with amylic alcohol, remove this amylic alcohol, evaporate, and apply direct tests for morphia. Be sure the amylic alcohol is entirely evaporated, as it alone gives a red color with sulphuric acid.

By no means all the various tests, or methods of separation have been mentioned, but these are, upon the whole, the simplest and most reliable. By practice it is possible to work with very much smaller amounts than were sent this month, and still obtain satisfactory reactions.

The prize this month has been awarded to "VERTE."

Of very nearly equal merit were the analyses of "NEMO" and "AMICUS;" the analysis of "NEW REMEDIES" was also good, so far as *morphia* was concerned.

The sample for April is a pharmacopœial preparation, its constituents, quality, and purity to be determined as accurately as possible. State whether, in your opinion, the preparation is of standard strength. Give references if convenient.

Amicus.—A portion of the March sample ignited on platinum foil gives *no residue*, and another portion dissolved in dilute sulphuric acid gives no test for *iron*, ferrous or ferric. The iron found by you in the "3d Group" is due to one of three causes, probably: impurity of reagents, impurity of water used as a solvent or to rinse test tubes, or to the presence of iron in the filter paper used. Your tests for magnesia are due to the same causes, as no reaction can be obtained from the original solution by addition of ammonic chloride, ammonic hydrate, filtering out the morphia, and adding to the filtrate phosphate of sodium. Test your filter paper carefully and determine for yourself.

Much *morphia* obscures the reaction for strychnia (36). It seems very probable that the reduction of iodic acid, in your testing of the February sample, was caused by liberation of H_2S from $(NH_4)_2S$, accidentally adhering to the precipitated cinchonia. The reaction is as follows:

$$4HIO_3 + 10H_2S = 2I_2 + 5S_2 + 12H_2O.$$

Try these reactions and send us your results.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

No. 305.—**Liquid Shoe-Varnish.**—You may try the following: Dissolve 8 ozs. of shellac, and ½ oz. of camphor, in 2 pints of alcohol; when dissolved, add 1 ounce of lamp black. Shake the mixture before using, and apply it with a small paint brush. The addition of about 1 oz. of gum sandarac is said to improve it.

No. 306.—**Rat-Poison.**—In the formula given on page 351 of our volume for 1877, the castor-oil seeds and the squills, as well as the calabar beans, are intended to act, and doubtlessly do act, as poisons. Castor-oil beans contain an acrid poison which has proved fatal or nearly so in many instances; see NEW REMEDIES, 1877, page 294. Squills contain a powerful cardiac poison (see NEW REMEDIES, 1877, page 40), and have long been used for destroying mice and rats.

No. 307.—**Rat-Poison.**—A formula will be found on page 96.

No. 308.—**Oil of Wormseed,** administration of.—We know it is rather difficult to make children swallow anything which has such a disagreeable smell and taste as oil of wormseed (Chenopodium). Yet we have seen the following plan succeed: Give to the child two or three rather strong peppermint-drops, which momentarily numb the gustatory nerves, then give the oil of wormseed previously mixed, out of sight of the child, with honey of roses, of which it must have received a small quantity some time before, to make it take kindly to it.

No. 309.—**Dr. Hermann Hager.**—You ask "Who is Hager?" We presume that this name is familiar to most of our readers, but as there appear to be a few who desire to obtain some details of his life and writings, we take pleasure to comply with the request.

Dr. Hans Hermann Julius Hager, born at Berlin, Jan. 3d, 1816, was brought up as a pharmacist at Salzwedel, held the proprietorship of the city-pharmacy at Fraustadt during 1842–49, and then removed to Berlin, to devote himself exclusively to the publication of pharmaceutical and chemical works. Since 1871 he retired to his estate, "Pulvermühle," near Fürstenberg, on the Oder. Dr. Hager has rendered eminent services to pharmacy by his writings, and by the determined stand he has taken and still takes against all secret remedies and nostrums. His chief works are: "Technik der pharmaceutischen Receptur," 8vo, Berlin, 1875 (mark 5.80). "Anleitung zur Fabrikation künstlicher Mineralwässer, Bresl., 1870.—"Adjumenta varia chemica et pharmaceutica," Bresl., 1866.—"Untersuchungen, ein Handbuch der Untersuchung, etc., aller Handelswaaren, etc.," 2 vols., Leipz., 1870–74.—"Erster Unterricht des Pharmaceuten," 2 vols., Berlin, 1871 (M. 23.60). "Commentar zur Pharmacopœa Germanica," 2 vols. (M. 32).—"Handbuch d. pharmaceutischen Praxis" (very valuable), 2 vols. 1875–78.—"Pharmaceutische Centralhalle; a weekly journal" (M. 8).—"Das Mikroskop u. seine Anwendung" (M. 3), etc.

No. 310.—**Paris Green,** also called Schweinfurth Green, was first made in 1814, in Schweinfurth, Bavaria, by adding a solution of arsenious acid to verdigris or acetate of copper. According to Erdmann, its composition generally is arsenious acid, 59 parts, cupric oxide, 31 parts, acetic acid, 10 parts, which corresponds to the formula: $Cu\,2C_2H_3O_2 + 3CuHAsO_3$, being a mixture of acetate and arsenite of copper. The proper antidote is the same as in all cases of arsenical poisoning, namely: hydrated ferric oxide, either prepared according to the directions of the U. S. Ph., by precipitating a solution of the ter-sulphate of iron with ammonia; or, by precipitating in the same manner any other ferric salt; or, according to the directions of the German Pharmacopœia, by precipitating ferric sulphate in solution with milk of magnesia, whereby magnesium sulphate (Epsom salt) is formed as a secondary product, which helps to remove the poison from the stomach and intestines.

No. 311.—**Liquid Rennet.**—Liquid rennet is rather awkward to keep; hence it has been proposed some time ago, to make in form of powdered extract, an account of which will be found in our last year's issue, page 107. The directions of the *Pharm. Germ.* for preparing liquid rennet or liquor seriparus are as follows:

Wash the stomach of a suckling calf with water, and remove the mucous membrane by scraping. Upon three parts of this membrane, in a fresh state, pour 26 parts of white wine, and then add 1 part of sodium chloride Macerate, with repeated stirring during three days, and

filter. The product should be clear and of a yellowish color; it should be only slightly acid.

Another formula of a liquid rennet possessing good keeping qualities will be found on page 75

No. 312.—**Essence of Jamaica Ginger.**—A formula for preparing essence of ginger is the following:

Mix any desired quantity of good Jamaica ginger in moderately fine powder, with an equal weight of animal charcoal; moisten the mixture with alcohol of 85 per cent; then pack it into a percolator, pour more of the alcohol upon it, and when the liquid begins to drop from below, close the orifice with a cork, and allow it to macerate for a few days. Then percolate, very slowly, until the product measures as many fluid ounces as there were troy ounces of ginger employed. The mass in the percolator may be exhausted with more alcohol, and the resulting second percolate may be used in place of alcohol, when making a fresh lot of essence. The best aromatics to add to ginger are cinnamon, nutmeg, or calamus, either singly or combined. They should, however, be used sparingly, otherwise the product could scarcely be called essence of *ginger*, but would become an aromatic essence exhibiting a combination of flavors.

No. 313.—**Monsel's Solution.**—If your solution, as you say, has become "thick," it may be owing to faulty manipulation, or to careless exposure in a warm place. It could perhaps be restored to its former normal strength by adding sufficient water to bring it to the specific gravity of the U. S. Pharm., namely, 1552.

No. 314.—**Belmontin**—not Belmontyle, as you have it—is the name of a product which is prepared from Burmese naphtha in the Belmont-Quartien Works, at London, by Warren de la Rue's patent for obtaining paraffin from mineral oils (see *Dingler's Polyt. Journ.*, 149, p. 319, and *Polyt. Centralbl.*, 1854, p. 637). The substance is a tolerably pure paraffin, which is manufactured into so-called Belmontin candles. During the distillation of naphtha, there comes over among the first products an oil resembling benzine, which is used as a cleaning agent, under the name of Sherwood's oil. Belmontin oil is another name for this; and it is, as you say, recommended for cleaning and protecting gun-barrels.

No. 315.—**Mother of Pearl** may be tinted with a smoky tinge, according to Arndt, by immersing it into a warm solution of bismuth sulphide into sodium hyposulphite, to which a few drops of antimonious chloride have been added.

No. 316.—**Vichy Water, artificial.**—

Dorvault gives the following formula:

Sodium carbonate	1364 grains.
" chloride	31 "
Calcium chloride, cryst.	77 "
Sodium sulphate	77 "
Magnesium sulphate	21 "
Ferrous sulphate, cryst.	1 "
Water	210 fl. oz.

Impregnate with 4 volumes of carbonic acid gas, at 5 atmospheres.

No. 317.—**Congress Water, artificial.**—

The following formula represents the natural water, according to the best published analyses:

Sodium chloride	1966 grains.
Potassium chloride	163 "
Calcium carbonate, freshly prec.	585 "
Magnesium carbonate, freshly prec.	411 "
Sodium carbonate	83 "
" bromide	16 "
Strontium carbonate, freshly prec.	7 "
Ammonium chloride	3 "
Manganese carbonate	2 "
Sodium iodide	½ "
Iron, sulphate (ferrous)	2 "
Water, charged with carbonic acid gas	8¾ gall.

No 318.—**Hypodermic Injection of Pilocarpine.**—The alkaloid of jaborandi is best administered hypodermically, in form of asolutionof the hydrochlorate of pilocarpia, in doses of ⅛ of a grain for adults, and ¼ grain for children.

No. 319.—**Starch Gloss.**—This may be prepared as follows: Melt together 4 parts of pure stearin and 6 parts of paraffin, and pour the liquid into a cold form to solidify. Then cut the mass into pieces weighing about ¼ oz. Having made a lot of starch-paste, say from one pound of starch, one of these pieces is added and left in the mass during a few minutes' boiling. When using unboiled starch-paste, a small quantity of a hot solution of starch containing the gloss is applied to a rag, and the latter gently rubbed over the fabric just before ironing.

No. 320.—**Leather-Varnish.**—The following formula is highly recommended by practical leather-workers: Add to one pint of alcohol, in a bottle, 1¼ oz. of best shellac, ½ oz. of sandarac, and 80 grains of mastich, together with from 300 to 460 grains of Venice turpentine to make it pliable and prevent it from cracking. The quantity of the latter depends on the nature of the leather, and must be determined experimentally. It is best to add a little coarse sand to the mixture, as a mechenical aid in breaking up the gums while shaking. Finally, a little aniline-black, dissolved in alcohol, is added, until the varnish has assumed a deep-black shade.

No. 321.—**To Preserve Fresh Fruits.**—Mr. Antonio dal Piaz recommends to place the fresh, sound fruits into a solution of sugar, made by dissolving in 1 litre (about 34 fl. oz.) of water 100–500 grammes (3½ to 17½ oz.) of sugar—the quantity varies with the acidity of the fruit—and 2½ to 3 grammes (40 to 50 grains) of salicylic acid. Cherries, currants, blackberries, pears, grapes, gooseberries, etc., may thus be preserved, even in loosely covered vesssels, without injuring the natural aroma.

No. 322.—**Gowland's Lotion.**—It is made thus:

Make an emulsion of 1 ounce of blanched sweet almonds, 2–3 drachms of bitter almonds, ½ pint of distilled water. To the strained emulsion, under stirring, gradually add a solution of 15 grains of corrosive sublimate in ½ pint of distilled water. Finally add enough water to make the whole measure 1 pint. This is used as a cosmetic by wetting the skin with it, and gently wiping it off with a cloth. It is also used as a wash for obstinate eruptions and minor glandular swellings and indurations.

While we have answered your query as to the composition of this nostrum, we do *not by any means* advise you to use it.

PRESCRIPTIONS AND FORMULÆ.

Analyses of Patent and Secret Remedies.

(*Continued.*)

Aqua Amarella.—A compound for hair-dyeing; is prepared with sugar of lead, common salt, and water.

Aqua Vitæ Aromatico-Amara. (F. Bolle, formerly J. B. Claude, Berlin):—

	Parts
Galangal, ginger, āā	2
Orange berries, European centaury, gentian, cinnamon, angelica, āā	1
Alcohol	30
Water	26

Digest and filter.

Aromatique (Albin Müller, Brünn):—

	Grammes
Spirit (90 per cent.)	50
Sugar	45
Extractive matter (composed of cinnamon, cloves, galangal, zedoary, angelica, anise)	4
Water	81

Sold in wine-bottle shaped bottles, and recommended for all derangements of the digestive organs.—*Hager.*

Aromatic Sulphur-Soap (Ed. Heger).--For cleansing the teeth and mouth. A hard sulphur-colored soap externally; on cutting, grayish-brown. Composed of soap with 10 per cent of hyposulphite of soda, perfumed with a scent resembling oil of balm.—*Hager.*

Asthma Cure (Dr. Aubrée, Ferte Vidame, Eure et Loire, France):—

	Parts
Decoction of Senega (10 parts of the root)	250
Iodide of potassium	50
Extract of opium	4
Simple syrup	500
Weak spirit	200

Colored with some cochineal tincture.—*Hager.*

According to a later analysis by Schröppel this remedy is thus composed:—

	Parts
Iodide of potassium	9
French lactucarium	1
Water	288
Simple syrup	48
Chloric ether	1½

Asthma Tea (Dr. Orlein).—Recommended for difficulty of breathing, dry coughs, loss of sleep, loss of appetite, etc.:—

	Parts
Licorice	8
Marshmallow root	6
Iceland moss	5
A sort of buckbean	2
Horehound	2

—*Schädler and Selle.*

Asthmatic Pastilles (S. Kittel's, now Daniel White & Co., New York).—Set fire to the pastilles and inhale the smoke. An analysis found in 100 parts:—

	Parts
Nitrate of potash	20.1
Impure resin of scammony	3.5
Gum and sugar	35.
Charcoal, plant-stems and leaves	40.7

—*Dr. Fleck.*

Augsburg Eye Balsam.—

	Grammes
Red oxide of mercury	.75
Extract of belladonna	.5
Tincture of opium	.5
Fatty substance	7

—*Hager.*

Eye Balsam (Müller's Widow, Berlin):—

	Grammes
Red oxide of mercury	.2
Unsalted, usually rancid, butter	10

Vegetable Eye Balsam (Martin Reichel, Würzburg):—

	Parts
Opium	5
Oxide of mercury	5
Camphor	2
Wax cerate	52

Contained in a piece of calf's bladder.—*Hager.*

Hoffmann's Ophthalmic Water (Hoffmann, Cologne).—A solution of one pint of sulphate of iron in 50 parts of rose water.—*Opwyrda.*

Asthma Cure (Kubale, Klitschdorf, near Bunzlau).—This is a solution of iodide of potassium, bromide of potassium, and sugar in water, strongly colored with a cochineal tincture containing alum. It is supplied in six bottles numbered 1 to 6, No. 1 being the weakest, and No. 6 the strongest in the iodide and bromide. In No. 3, for example, we found:—

	Grammes
Iodide of potassium	5
Sugar	2½
Alum	
Cochineal coloring matter	½
Water	200

—*Hager.*

Eye Powder (Laeyson, Paris), also known as Odorous Powder.—For the strengthening, restoration, and preservation of the sight. A powder composed of—

	Parts.
Burnt chalk	100
Ammonia	50
Charcoal	6
Oxide of iron	2
Cinnamon bark	2

—*P. L. Geiger.*

Eye Salt.—Powdered alum.—*G. Graefe.*

Eye Water (Biedermann, Annaberg).—2 grammes sulphate of zinc in 60 grammes distilled water, with a little infusion of cloves.

Eye Water (Brun) is a solution of 4 parts of aloes in 32 parts of white wine, with 32 parts of rose water, and 1½ parts of tincture of saffron.

Eye Water (Chantomelanus) "makes spectacles superfluous." A turbid yellow-brownish liquid, consisting of a weak extract of lavender flowers in diluted spirit, in which some oil of lavender has also been dissolved.—*Opwyrda.*

Dr. Graefe's Eye-Water (L. Roth, Berlin).

	Grammes
Sulphate of zinc	1.5
Fennel water	100

slightly colored with fennel seed tincture.—*Schädler.*

Eye Essence (Dr. Romershausen).—A tincture prepared from fennel seeds and fresh young fennel.—*Hager.*

Eye Balsam (Müller, Berlin):—

	Parts
Red oxide of mercury	5
Opium	3
Unsalted butter	100

Eye Water (J. P. H. Hette).—A solution of ethereal oils of lavender, bergamot, rosemary, and tincture of opium in spirits of wine, 50 per cent.—*Wittstein.*

Eye Water (Bernhard Kraft, Calbe) for acute inflammation of the eyes and for strengthening the sight. Seven grammes of an impure muddy sediment-leaving spring water containing half a gramme of native sulphate of zinc containing iron.—*Schädler.*

Eye Water (Inspector Stroinski, Neisse).—One part of sulphate of zinc dissolved in 500 parts of common river water.—*Schreiber.*

Once a *trace* of patchouli perfume was added to this water.—*Hager.*

Dr. White's Eye Water (T. Ehrhard, Altenfeld, Thuringia).—Four cloves, a piece of cinnamon, the size of a large pea, two teaspoonfuls of rose water, 1 drop of vinegar, 10 drops of arnica tincture. Digest for an hour and filter. Dissolve in the filtrate some white vitriol of the size of a pea.—*Hager.*

	Parts.
Sulphate of zinc	3
Honey	4
Water	80

Perfumed with oil of cloves and a trace of mustard oil.—*Wittstein.*

Aurora Pomade.—For promoting the action of the skin. Cocoa butter with orris.

Auxilion.—A packet of small plasters for the painless and radical cure of corns. Each plaster is to be worn for about a week, and then the horny pustule is to be removed with a sharp knife. The plaster is a compound of one part of resin plaster, and 2 parts of lead plaster, and is likely to promote the removal and solution of the thick skin of the corns.—*Hager.*

Ayer's Pills.—Sold in long wooden boxes, each containing 25 pills, covered with sugar and starch, and composed of pepper, colocynth, gamboge and aloes.—*Hager.*

American Baking Powder.—For making light pastry. Tartaric acid and chalk.—*Reichardt.*

Borwick's German Baking Powder is an artificial fermentation powder, compounded with coarse maize-flour.—*Gädike.*

Prof. Horsford's Baking Powder or Yeast Powder (Cambridge, U. S.)—This is a powder supplied in two

packets. The one contains an acid phosphate of lime and magnesia made up with a certain quantity of flour, and the other is bicarbonate of soda, with a little muriate of potash.

Goodall's Baking Powder is a compound of 2 parts of rice flour, with 1 part of a mixture of tartaric acid and bicarbonate of soda.—*K. Boschan.*

Aromatic Malt Baths (J. Hoff, Berlin).—Wittstein says these consist of coarsely crushed barley malt at six times its selling value.

Bahr's Non-poisonous Medical Snuff.—A snuff largely advertised in the Berlin journals, composed chiefly of powdered galls.—*Hager.*

Balm of a Thousand Flowers.—Chandler says this is a thick yellow emulsion, free from injurious metallic ingredients.

Balm of White Lilies, for preserving and beautifying the skin (H. A. Hoadley, New York).—This, also, according to Chandler, is a red-colored water containing a large quantity of chalk in suspension, but with no injurious metallic ingredient.

Berlin Balsam, for burns, cuts, bruises, and wounds of every kind, sores and ulcers, frost-bites, etc.—Chloride of lime with impure glycerine.

Balsam Bilfinger, for rheumatism and gout:

	Grammes
Black soap	25
Water	40
Spirit of wine	10
Camphorated spirit	10
Liquor ammoniæ caustic	20
Tinct. capsici	5

—*Schädler.*

Professor Cook's Balsam of Life.—Recommended especially for toothache and skin diseases.

	Parts
Borax	20
Boiling water	250
Camphor	1½

—*Hager.*

Poser's Balsam (E. Gross, Breslau) for chronic and local rheumatism.—A yellow liquid, composed of:

	Grammes
Oil of rosemary	4
Camphor	10
Tincture of ants	15
Tincture of cantharides	5
Spirit of Wine	90
	Drops
Tincture of saffron	10

—*Hager.*

Potsdam Balsam (aromatic balsamic perfume).—

	Grammes
Liquid storax	4
Cloves	2
Oil of cloves	3
Oil of cassia	1
Oils of bergamot, lemon, and lavender ää	2
Oil of curled mint	¼
S. V. R.	200

Macerate and filter.—*Hager.*

St. John Long's Balsam (liniment), used for application to the chest in cases of phthisis, is a thick emulsion composed of

	Parts
Turpentine	25
Yolk of eggs	50
Concentrated vinegar	5
Rose water	15

and a few drops of essence of lemon.

Tapeworm Cure (Bloch, Vienna).—Coarsely powdered pomegranate root bark, 125 grammes, boiled for half an hour in 800 grammes water. To this add solution of ammonia, 5 grammes; boil again for a quarter of an hour. Add kousso flowers, 25 grammes. Again boil for a few minutes, and when cold add citric acid, 1 gramme, and alcohol, 30 grammes. Press, filter, and set aside. The product should weigh about 500 grammes. Klinger says this remedy is merely a concentrated essence of pomegranate root bark, and contains neither ammonia nor citric acid.

Balsam St. Genevieri:—

	Parts
Thick turpentine	5
Olive oil	30
Beeswax	25
Spermaceti	5
Camphor	1
Red Sanders	4

Tapeworm Cure (Jacoby, Berlin).—A box containing 20 grammes of kousso powder and directions for use.—*Hager.*

Tapeworm Cure for Children and Adults (E. Karig, Berlin):—

	Grammes
Burned oxide of copper	1
Cassia powder	1½
Sugar of milk	10

Divide in 24 powders.—*Schädler.*

Tapeworm Cure (Mix).—(*a*) A mixture containing 3 d cigrammes of sulphate of quinia, with a few drops of hydrochloric acid to dissolve it in 200 grammes water. To be taken in the course of three days. (*b*). A box with 12 grammes kousso powder. A teaspoonful to be taken each morning in black coffee.—*Schädler.*

Tapeworm Cure (Richard Mohrmann, Frankenberg, Saxony).—This Mohrmann travels about in the fashion of the old charlatans, to sell his medicines. These consist of two varieties, the first being 10 grammes of extract of male fern, the second a mixture of 8 grammes each, of raspberry juice and castor oil. These remedies have been used for tapeworm for almost 100 years. The doctor's directions for use are to mix 30 grammes of the extract with the castor oil and raspberry compound, and 30 drops of the mixture to be taken every quarter of an hour, until purging occurs.

Tapeworm Cure (Mook, Berlin).—A decoction of about 110 grammes of pomegranate root bark, yielding grammes of liquid, and mixed with 1 gramme of extract of male fern. The directions order that on one day, one or two tablespoonfuls of castor oil should be taken, a herring salad in the evening, and the following morning, after coffee, a third of the contents of the bottle, another third half an hour later, and the remainder in yet another half hour.—*Hager.*

Laffon's Tapeworm Pills are compounded of the ethereal extract of the root of Aspidium Lonchitis, Asp. Helveticum, and Asp. Filixmas, together with the alcoholic extract of the flowers of Achillea mutellina and maschata, and the powder of the flowers of Arnica Doronicum.—*Wittstein.*

Peschier's Tapeworm Pills.—Ethereal extract, and powder of the rhizome of male fern of each gramme 1.6; make 20 pills. Take ten at night and ten in the morning.

To *Anatherin Balsam* add another formula published by the Netherlands Society:—

Tinct. Myrrh	160	grammes
Tinct. Catechu	80	"
Tinct. Guaiacum,		
Tinct. Rhataniæ ää	40	"
Tinct. Caryoph	30	"
Spirit. Cochleariæ	20	"
Ol. Cassiæ	20	drops.
Otto rose	1	drop.
Spirit, 50 per cent	630	grammes,

The editor of the *Chemist and Druggist* (London) from which the above formulæ are copied, adds the following corrections of those published on pages 59 and 60 of NEW REMEDIES.

American Shampoo Fluid should also mention, as an ingredient, "a little tincture of cantharides."

Stomachic Bitters.—For "50 parts of water," read "58 parts."

After the formula for *Acetine*, add "wadding to be soaked with this liquid, and laid on."

Algophon, for "2 grammes" read "4 grammes."

For Prurigo.—

℞. Acidi carbolici..... ℥ j.
Acidi hydrocyanici..... ℥ j.
Morph. sulph..... gr. vj.
Hyd. chlor. corros..... gr. vj.
Glycerini..... ℥ iij.
Misce. S. Apply to the itching part.

Ointment for Hæmorrhoids.—

℞. Acidi tannici..... ʒ j.
Acidi carbolici..... gr. v.
Ext. opii..... ʒ j.
Ext. bellad. } āā ʒ ss.
Ext. aconiti }
Cerat. simp..... ℥ j.
Misce bene. S. Apply to the piles morning and evening, and introduce a small piece into the bowel after each action.

For Painful Hæmorrhoids.—

℞. Liquor bismuth..... ℥ j.
Tinct. opii deodorat..... ℥ j.
Mucilag. amyli..... ℥ iij. M.
S. Inject one-fourth every three or four hours.—*Louisville Medical News.*

For Dysentery.—

℞. Bismuthi subnit..... ℥ ss.
Acid. salicylici..... gr. vj.
Acid. carbolici..... ♏ iij.
Tinct. opii (Sydenham)..... fl. ℥ j.
Tinct. belladonnæ..... fl. ℥ j.
Aquæ..... O j.
M. S. Inject one ounce with baby-syringe after each evacuation.—*Canadian Jour. of Med. Science.*

R. Rother's Formula for Bay-Rum.—True bay-rum is made from *Pimenta acris*, and not from *Laurus nobilis*, as commonly supposed; the method of its distillation not being known outside the West Indies, it has been customary to make it extemporaneously with the oil of bay distilled from the leaves of the former plant. This preparation is inferior in fragrance, however, to the genuine article. The following formula of R. Rother is said to give very good results: Take of

Oil of bayberry,..... 1 fluid ounce.
Jamaica rum..... 1 pint.
Strong alcohol..... 4 pints.
Water..... 3 pints.

Mix the rum, alcohol, and water, then add the oil; mix and filter.

Lotion for Sore Nipples.—A correspondent of the *American Practitioner* gives the following as the lotion for sore nipples used in the famous "Rotunda" Lying-in Hospital of Dublin.

℞ Powdered borax..... ℥ ij.
Powdered chalk..... ℥ i.
Spirits of wine..... ℥ ij.
Water..... ℥ ij. M.

Creosote and Wine.—

M. Dujardin-Beaumetz gives the following formulæ for creosoted wine.

	Grammes.
Pure creosote	7
Alcohol	200
Bagnol wine	800
Creosote of wood-tar	7
Alcohol	200
Lunel wine	700
Syrup of orange-peel	100

The latter formula has the advantage of being much more palatable than the former.

A New Counter Irritant.—Dr. Contrier, in the *Union Médicale*, suggests that Hardy's Extractum Pimenti is likely to prove a valuable substitute for the rubefacients and blisters now in use. It is not so fugacious as mustard nor so irritating as antimony or croton oil. It begins to act in from 10 to 30 minutes, according to the delicacy of the skin, causing heat, a slight tingling and redness, which go on increasing for about three hours, when they remain stationary. The plaster may be applied from 8 to 10 hours in children, and for 20 to 24 in adults. No great irritation capable of impeding occupations ensues, and it may be best compared with that of a sinapism arrived at half its power, and so maintained for the 24 hours.

Lemon Cordial (*The Pharm.*).

Lemon peel, fresh..... 2
Orange peel, " 1
Lemon peel, dry..... 2
Diluted Alcohol..... 1 gall.
Water,
Syrup, each..... 6 pints.

Almond Powder for the Hands (*The Pharm.*).

Almonds, blanched and powdered..... 1 pound.
Castile soap, white, " ..... 8 ounces.
Orris root, " ..... 2 "
Pumice stone, " ..... 4 "
Oil of bitter almonds..... 2 drachms.

Mushroom Ink.—Mr. Buillard, some years ago, stated that the two fungi, *Coprinus atramentarius* and *Coprinus typhoides*, on standing, melt up into a brownish-black juice, which may be used as ink. Mr. Boudier confirms this statement, and says that the best method of preparation is to fill a bottle with the fungi, and when they have melted down by slow decomposition, to pour off the supernatant slightly colored liquid. To the remainder a little gum arabic and oil of cloves is added. Before using, it must be well shaken or stirred up. The color is owing partly to the black spores, and partly to colored bacteria. The ink is perfectly black, and not destroyed by chemical means. Chlorine causes it to fade somewhat, but the spores are still plainly visible, if need be, with a lens.

Syrupus Ferri Phosphatis cum Quinia et Strychnia (Geo. Masson).

℞. Strychniæ..... 25 grs.
Quiniæ sulph..... 896 "
Ferri sulph..... 4 oz. 114 "
Sodii phosph..... 12 " 118 "
Sacchari puri contus..... 60 "
Acid. Phosph. dil..... 48 "
} avoird.

Dissolve the quinia sulphate in distilled water with enough dil. sulphuric acid, precipitate with ammonia, filter and wash, avoiding the use of too much water; then add the magma to the dil. phosphoric acid, in which the strychnia has previously been dissolved. Dissolve the ferrous sulphate in 2 pints and the sodium phosphate in 5 pints of recently boiled distilled water, filter the iron solution, if necessary, to remove any oxidation, allow the solutions to cool to 130° F., and then add very gradually, with constant stirring, the solution of sodium phosphate to that of the iron salt; allow the precipitate to subside, remove the supernatant liquid, and wash the ferrous phosphate by decantation with recently boiled distilled water; then transfer to a calico filter, express quickly the remaining liquid, and dissolve in the dilute phosphoric acid; finally, add the sugar, dissolve without heat, and subsequently add enough distilled water to make the product measure 100 fl. oz. (U. S.), each fluidrachm of which will contain one grain of ferrous phosphate, one grain of quinia phosphate and ½ of a grain of strychnia.*

Administration of Salicylic Acid. — Guéneau de Mussey recommends that salicylic acid be administered by dissolving it in a syrup of gum by the aid of ten times its weight of brandy, and adding to it a little lemon juice.

* The original formula, being constructed on the basis of British measures, has been modified by us so as to correspond to U. S. measure.—Ed. N. R.

How to Make Beef-Tea. — Dr. Horace Hare, in experiments made in the laboratory of the University of Pennsylvania, has determined that beef boiled in the good old-fashioned way in a bottle with water gives a resulting solution which contains only about one-fourth of one per cent of nourishing material. The beef-tea thus manufactured is chiefly a solution of the salts of meat, and is therefore not nutrive, and only valuable as a stimulant to digestion. But there is another way of making beef-tea, which gives better results. Take a quantity of tender meat, and, after cutting off the fat, chop it up fine, put it in a bowl, pour a pint of water over it, and let it stand over night. It may possibly be well to keep the water just on a simmer: do not raise the temperature above 140°, however, or you will coagulate all the albumen, and so either leave it on the sieve in straining, or introduce it into the stomach in the form of curds. After this simmering solution has been allowed to stand over night, pour it into a pipkin and heat it again gently with enough salt to give it flavor, and, if necessary, add a drop or two of muriatic acid. Then pour it out over a hair sieve into a jar. The resulting solution will contain all the nutriment possible, and is the most valuable kind of stimulant.

Sapo Viridis (Green Soap).—Mr. Herman Betz recommends the following formula:

Oil of linseed,	
Solution of potassa	āā 1 pint.
Coloring matter	q. s.
Oil of citronella	10 drops.

Place the oil and potassa into a porcelain dish; mix thoroughly, and boil with a regulated heat until the mass becomes thick or stringy; then add the coloring matter and the oil of citronella, with constant stirring. The coloring matter is to be prepared by precipitating a solution of indigo with lime; enough of this is to be added to impart to the soap a dark-green color.—*Am. Journ. of Pharm.*

Bay Rum.—A formula which produces an excellent article is as follows:

Oil of bay	1 drachm.
Oil of pimento	20 drops.
Jamaica rum	1 pint.
Alcohol	4 pints.
Water	3 pints.

Water of ammonia, a few drops, sufficient to give the requisite color.—*Am. Journ. of Pharm.*

Paresi's Styptic Collodion.

Collodion	100 parts.
Carbolic acid	10 "
Tannic acid	5 "
Benzoic acid	3 " Mix

Sedative Pills, Gunther's.—These are composed of the following ingredients:

Asafœtida, powd	50 parts.
Extract of valerian	50 "
" " belladonna	3 "
Oxide of zinc	1 "
Castor	2 "

Make into a pill-mass, to be administered in doses of 3 to 10 grains, twice daily, in chorea, etc.

Ferrous Oxide with Manna (Chrysen), (Protoxide of Iron with Manna).

Ferrous sulphate (protosulphate of iron), cryst. and powdered	75 gm.
Flake manna	100 "
Water of ammonia (sp. gr. 0.900)	80 "
Alcohol, 94 per cent	260 "

Mix the ferrous sulphate intimately with the manna, and add to the mixture the water of ammonia, rubbing the whole into a homogeneous paste. To this is added half of the alcohol, when the mixture separates into a soft mass and a supernatant ammoniacal liquid, which may be thrown away. Having washed the mass with the remainder of the alcohol, it is dried and powdered. The product amounts to about 125 grammes of manna-iron (ferrous oxide), containing, of course, some ammonium sulphate, of a fine green color, and entirely unalterable in air.

NEW PATENTS.

[*The following list is compiled from official sources, especially for* NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 114 Nassau St., New York, who will furnish gratis to subscribers any information relating to this department.*

TRADE MARKS REGISTERED DURING DECEMBER, 1877.

Medicinal Preparations.

5,393. Hegeman & Co., New York, N. Y. An eagle with outstretched wings on a druggist's mortar and pestle, and bearing a scroll in his beak.

5,396. Roswell Van Buskirk, Newark, N. J. "The Word-symbol "Poor Man's Antidote."

5,399. Luke A. Wilder, Boston, Mass., and James A. Furguson, New York, N. Y. The monogram "I. D. & D."

5,402. J. M. Connell, Boston, Mass. The word-symbol "East Indian."

5,404. Dundas Dick, New York, N. Y. The new and arbitrary word "Thermaline."

5,405. Graves & Lowery, Eugene, Ind. The fanciful title "Washington."

5,415. J. G. Webb & Co., St. Louis, Mo. The letter "W."

5,423. McHugh & Johnson, New York, N. Y. The word-symbol "Aquarenis."

5,427. J. H. Zeilin & Co., Philadelphia, Pa. The word-symbol "Simmons."

5,436. Kennedy & Co., Pittsburgh, Pa. "The word-symbol 'Carboline.'"

5,437. Emery Livermore, St. Louis, Mo. "The symbol of a pine cone."

5,439. Novelty Chemical Co., New York, N. Y. "The caduceus or wand of Mercury and the shield."

5,455. Abraham Laube, New York, N. Y. The word-symbol "Egyptian" and the monogram "A. L."

5,458. Daniel Stowell and Charles S. Clarke, Boston, Mass. "The words 'Golden Crown' and the representation of a crown."

5,459. John Sterling, Kansas City, Nev. "The words and figures 'Sterling's Royal Remedy,' the symbol of a cross with rays issuing from the angles, and the word-symbol 'Salus' printed thereon."

Cosmetics and Perfumery.

5,394. Francis F. Marshall, New York, N. Y. The word-symbol "Secret de Beauté." (Cosmetics.)

5,403. Day & Frick, Philadelphia, Pa. The word-symbol "Bleacher."

5,425. Theodore Ricksecker, New York, N. Y. The representation of a lion's head holding a scale (balance) in his mouth, and the monogram "T. R."

5,443. John W. Thomas, New Orleans, La. The word 'Hair' repeated as an exclamation.

5,444. Day & Frick, Philadelphia, Pa. The word-symbol "Bleaching."

5,447. Cornelius Earle, Allentown, Pa. The fanciful title "Golden Palm."

5,453. T. Egersdorf, Leavenworth, Kan. The fancifully selected words 'Clara Mia.'"

5,454. J. R. Finney, Allegheny County, Pa. "The figure of Cupid holding a tooth-brush and box."

5,456. John A. Meyer, Brooklyn, N. Y. "The word-symbol 'Pioneer.'"

Carbonated Beverages.

5,445. Actiengesellschaft Appollinarisbrunnen, Neuenahr, Prussia, Germany. "The word-symbol 'Appollinaris.'"

TRADE-MARKS REGISTERED DURING JANUARY, 1878.

Medicinal Preparations.

5,478. Thompson & Dale, Boston, Mass. "A monogram composed of the initials A. J. T."

5,492. E. F. Houghton & Co., Philadelphia, Pa. "The fanciful word 'Petrolei.'"

5,514. Dabbs Brothers, Phil., Pa. "The word 'Crow's,' and the figure of a bird."

5,515. Andrew J. Flagg, Claremont, N. H. "The words 'Dr. A. J. Flagg's.'"

5,518. E. W. Haines, San Francisco, Cal. "The word-symbol 'Abyssinian Desert Company.'"

5,523. Dr. D. Jayne & Son, Phil., Pa. "The pictorial representation of our place of business."

5,524. Dr. D. Jayne & Son, Phil., Pa. "The pictorial representation of a woodland scene."

5,528. W. R. Merwin, Detroit, Mich. "Two bust figures of a person marked respectively 'Before Taking,' 'After Taking.'"

5,529. H. S. Woodard, Bloomington, Ill. "The words 'Dr. Z. Water's Ne Plus Ultra.'"

5,543. R. Letson, Brooklyn, N. Y. "The word-symbol 'Antrachine.'"

5,551. V. P. D. Townsend, New York, N. Y. "The fac-simile of the signature of V. P. D. Townsend, and the initials V. P. D. in parenthesis."

5,566. G. G. Steketee, Grand Rapids, Mich. "The word 'Kimm's,' the figure of the lions supporting the shield, and my fac-simile signature."

5,569. W. Beckford, Boston, Mass. "The word-symbol 'Mocipac.'"

5,570. Ambrose L. Clenn, Red Wing. "The letters 'A. L. C.' arranged within three sides of a cube, as shown."

5,571. A. M. Du Bois, Cobden, Ill. "The word-symbol 'New Blood.'"

5,572. J. G. De Brelton, Desdier Landing, La. "The representation of a wineglass with a teaspoon therein."

5,574. Holman Liver Pad Company, New York, N. Y. "The arbitrarily selected word 'Absorption.'"

5,594. Jules Ferré, Paris, France. "The word-symbol 'Ricord.'"

5,595. Jules Ferré, Paris, France. "The allocation of the monogram, open books, and medals."

5,596. Jules Ferré, Paris, France. "The word-symbol 'Bron.'"

Paints.

5,479. The Iron Clad Paint Company, Cleveland, Ohio. "The word-symbol 'Iron Clad.'"

Chemicals.

5,504. Pennsylvania Salt Manufacturing Co., Phil., Pa. "The representation of a polar bear in connection with the word-symbol 'Greenland.'"

Carbonated Beverages.

5,482. A. A. Colby, New York, N. Y. "The word-symbol 'Deep Rock.'"

Cosmetics, Soaps, and Perfumery.

5,466. F. W. Barnum, Danbury, Ct. "The word-symbol 'Peerless.'"

5,469. Fairchild & Shelton, Bridgeport, Ct. "The word-symbol 'Ozone.'"

5,489. Curtis, Davis & Co., Boston, Mass. "The word-symbol 'Welcome.'"

5,502. W. H. Hall, New York, N. Y. "The word-symbol 'Floriline.'"

5,510. Binghamton Oil Refining Company, Binghamton, N. Y. "The arbitrarily selected words 'Cream of Petroleum.'"

5,512. H. & J. Brewer, Springfield, Mass. "The symbol composed of the circular lines and the circle of dots.

5,547. A. Melzer & Co., Evansville, Ind. The figure of a pyramid and sun, with the motto "Purita et Constantia."

5,573. Dolly Moulton Gale, Worcester, Mass. "The word-symbol 'Snowflake.'"

LABELS REGISTERED DURING DECEMBER, 1877.

1,277. "Witch-Hazel Salve." B. W. Dyer, New York, N. Y.

1,278. Witch-Hazel Cough Balsam." B. W. Dyer. New York.

1,280. "True Mineral Waters." J. Matthews, New York.

1,281. "Soda Water from Matthews' Apparatus. J. Matthews, New York.

1,282. "Persian Mead." J. Matthews, New York.

1,283. "Soda Water." John Matthews, New York.

1,284. "Ginger Ale from the Matthews Apparatus." J. Matthews, New York.

1,286. "Mistura Copaiba Comp." F. S. Stevens. Bridgeport, Ct.

1,287. "Alterative Syrup." F. S. Stevens, Bridgeport, Conn.

1,291. "L. B. Hinman's Asthmatic Respirators and Catarrh Cure." L. B. Hinman, New Haven, Ct.

1,294. "Pyro-Quinia, etc." Merrick, Oates & Co., Boston, Mass.

1,295. "Barbour's Russian Remedy." Russian Remedy Company, Philadelphia, Pa.

1,296. "Universal Pile Pills." F. E. Smith & Co., Middlebury, Ct.

1,299. Prof. Liebig's Double-Bottle Hair Renewer." C. C. Fisher & E. I. Fisher, Philadelphia, Pa.

1,300. "Franklin Howes' Medical Discovery." F. Howes, Northampton, Mass.

1,304. "Ricksecker's Nurser." T. Ricksecker, New York.

1,306. "Dr. A. Q. Simmons' Genuine Vegetable Liver Medicine." J. G. Webb & Co., St. Louis, Mo.

1,308. "Boland's Aromatic Bitter Wine of Iron." James Boland, Chicago, Ill.

1,309. "Dr. Flint's Sciatic Remedy." D. D. Flint, Dexter, Me.

1,310. "Dr. E. Fenton's Great Catarrh Annihilator." Enos Fenton, Kalamazoo, Mich.

1,311. "Hegeman & Co.'s Celebrated Elixir of Calisaya Bark." Hegeman & Co., New York, N. Y.

1,312. "Craig's Kidney Cure." W. D. Harris, New York, N. Y.

1,313. "Natural Hair Restorer Carboline." Kennedy & Co., Pittsburg, Pa.

1,314. "Keith's Cough Compound." B. Keith & Co., New York, N. Y.

1,315. "Keith's Dyspepsia Elixir." B. Keith & Co., New York, N. Y.

1,316. "Dr. Koons' Sanguifying Usquibaugh." Jonathan Koons, Northern Ill.

1,317. "Lenzi's Helvetian Salve." Martin Lenzi, Salt Lake City, Utah.

1,318. "Otaki Root Beer, from Matthews' Apparatus." John Matthews, New York, N. Y.

1,319. "Otaki Root Beer." John Matthews, New York, N. Y.

1,320. "Carbolic Mouth Wash." Meade & Baker, Richmond, Va.

1,321. "Tartarian Koomis, Made from Pure Milk, Undiluted by Whey." George McKelway, Phil., Pa.

1,326. "Marshall's California Sugar Pine Balsam." M. W. Marshall, Fond du Lac, Wis.

LABELS REGISTERED DURING JANUARY, 1878.

1,337. "Ashwell's Solid Cooked Corned Beef." Ashwell & Co., New York, N. Y.

1,341. "Swiss Kumyss, or Lacto-Pepticum." Eugene A. Du Puy, Brooklyn, N. Y.
1,342. "Compound Witch-Hazel Pills." B. W. Dyer, New York, N. Y.
1,343. Jeffers' Original Bronchial Cigarettes." Perley Jeffers, Chicago, Ill.
1,344. "Dr. Z. Waters' Indian Vegetable Cathartic and Liver Pills." H. S. Woodard, Bloomington, Ill.
1,345. "Dr. Z. Waters' Raspberry Balsam." H. S. Woodard, Bloomington, Ill.
1,346. "Dr. Z. Waters' Honey Balsam." H. S. Woodard, Bloomington, Ill.
1,347. "Dart's Cough Syrup," etc. H. D. Barto, Rochester, N. Y.
1,348. "Black's Expectorative." J. R. Gorham, Jr., Newburg, N. Y.
1,349. "Genuine Persian Tooth Paste." E. C. Lee, Boston, Mass.
1,350. "Marshall Rheumatic Oil Liniment." M. W. Marshall, Fond du Lac, Wis.
1,351. "Marshall Rheumatic Liniment." M. W. Marshall, Fond du Lac, Wis.
1,353. "Compound Witch-Hazel Hair Restorer." B. W. Dyer, New York, N. Y.
1,363. "Robert A. Hance's Elixir Coca Comp." R. A. Hance, Philadelphia, Pa.
1,364. "Benzine Soap." A. Melzer, Evansville, Ind.
1,371. "Sylvester's Cure for Neuralgia and Diphtheria." Sylvester & Dunn, San José, Cal.
1,373. "Walcott's Remedy for Pain." E. H. Walcott, Natick, Mass.
1,376. "Rome's Tooth Powder." J. R. Bond, Brooklyn, N. Y.
1,381. "Prof. Shaw's Fragrant Antiseptic Cologne," etc. Littell & Shaw, New York, N. Y.,

PATENTS GRANTED DURING DECEMBER.

December 4th.

Air-tight paint-mixing can, I. Banister..... 197,755
Apparatus for classifying and concentrating ores, G. M. Rice, 2d..... 197,897
Apparatus for macerating and digesting fibres, W. W. Harding..... 197,850
Artificial animal black, P. G. L. G. Designolle. 197,834
Artificial limbs, G. L. Ridsdale..... 197,741
Bottle-stopper, F. W. Perry..... 197,890
Health-lifts, E. A. Tuttle. 197,750
Illuminating-gas, m'f'g of, H. Aitken..... 197,712
Pill-machines, John Hill..... 197,779
Self-raising lard, T. H. Rosser (R)..... 7,979

December 11th.

Artificial limbs, E. Osborne..... 197,943
Dentist's chairs, F. Peters..... 198,148
Dental spittons, W. Reynolds..... 197,977
Electro-vapor baths, C. S. Powers.. 198,152
Invalid bed attachment, B. D. Brown..... 197,992
Magnetic batteries, G. Edard..... 198,008
Medical compound for fumigating, D. Manbeck.. 197,973

December 18th.

Abdominal supporter, R. W. Gray and T. S. Foster..... 198,198
Air, moistening, C. R. Merrill..... 198,308
Carbonating beverages, apparatus for, J. Matthews 198,403
Carburetters, N. F. Bossert 198,270
Cosmetics, tube for holding, J. L. Petingale. .. 198,210
Disintegrating cereals, process and apparatus for, R. d'Heureuse..... 198,192
Furnace for smelting, Evans & Prescott..... 198,283
Gas apparatus, T. R. White..... 198,438
Gas, apparatus for generating illuminating, C. G. Brewer..... 198,340
Gases, removing and destroying sewer, S. J. Corbett..... 198,277
Leaf, manufacture of metallic, A. E. Outerbridge, Jr..... 198,209
Scales, adjusting device for weighing, F. Fairbanks..... 198,365
Soda from its sulphate, manufacturing of, F. Gutzton 198,293
Wool, treating mineral, A. D. Elbers (R)..... 7,994

December 25th.

Alkali from waste solutions, apparatus for recovering, M. Nixon..... 198,671
Ammonia soda manufacture, E. Tolvay..... 198,699
Beer, birch, J. J. Rogers..... 198,467
Blow-pipe, T. Fletcher..... 198,593
Bottles and bottled liquids, case for transporting, G. Wilson (R)..... 8,011
Carburetter, H. W. Merritt..... 198,731
Carburetters, regulated valve for, H. W. Merritt. 198,657
Filter, atmospheric, R. C. Ludlow 198,637
Gas, manufacturing illuminating, Aitken and Young..... 198,725
Logwood, machine for cutting and grinding, C. P. Hayes..... 198,614
Magnifying glasses, stand for, L. Heath..... 198,542
Microscopes, stage for, E. Gundlach..... 198,607
Truss, E. Edel..... 198,586

PATENTS GRANTED DURING JANUARY, 1878.

January 1st.

Air-cooling apparatus, A. Albertson..... 198,830
Amalgamator, I. M. Phelps..... 198,904
Disintegrating machine, D. C. Ebaugh..... 198,764
Evaporating pan, W. A. Morrison... 198,787
Gases, recovery of waste, nitrous, B. C. Molloy and J. D. Warren..... 198,776
Microscope, R. B. Tolles..... 198,782, 198,783
Microscope, object glass for, E. Gundlach..... 198,914
Ore-roasting apparatus, H. F. Howell. 198,767
Scales, F. Fairbanks and T. Spooner..... 198,877
Scales, pendulum, N. H. Putney..... 198,815
Spine diseases, treating, M. Case..... 198,871
Teeth on aluminum plates, securing, I. T. Thornton..... 198,908

January 8th.

Acid, manufacture of tartaric, F. Dietrich..... 199,039
Amalgamator, G. O'Brien..... 199,095
Bottle-stopper, J. Klee (R)..... 8,034
Bottle-stopper holder, J. Metzger..... 198,992
Cork-cutting machine, A. Faber..... 199,047
Distilling apparatus, J. Wallace..... 199,006
Drawer-pull, J. E. Merriman..... 199,086
Microscope, J. J. Bausch..... 199,015
Ore-crusher, E. Gimson..... 198,936
Pulverizing machines, H. B. Moore.....198,993, 198,994
Pump and measuring faucet, S. M. Cawker..... 198,969
Retort for separating zinc from alloys, E. Balbach, Jr. (R)..... 8,029
Soap, medicated, E. L. Moodie..... 199,087
Sugar, refining raw, G. A. Jasper.....198,944, 198,945

January 15th.

Antiseptic composition, F. Jourdes..... 199,193
Bottle-stopper fastener, F. W. Perry..... 199,165
Bottle-stopper fastener, E. D. Weyburn..... 199,337
Calcimining, size for, W. S. Welch..... 199,242
Carburetting air, C. E. Wolle and S. Munyon... 199,246
Gas retort charger, O. O. Ross..... 199,316
Inhaler, O. P. Barber..... 199,140
Rectifying apparatus, A. J. and A. B. Gallagher.....199,281, 199,282

January 22d.

Dental engines, hand-piece for, J. W. Gilbert... 199,431
Dental engines, hand-piece for, J. Re Qua..... 199,469
Dental engines, rocking standard for, E. T. Starr 199,477
Filter for beer pumps, J. C. A. Rohde..... 199,577
Filter, E. N. Dickerson..... 199,357
Filter, J. Crawford..... 199,519

Furnace, metallurgical gas, W. S. Gillen..... 199,362
Gas from gas wells, preparing, W. S. Gillen..... 199,363
Gas, purifying, T. N. Kirkham, D. Hulett, S. Chandler, Jr., and J. Chandler..... 199,450
Scales, platform, W. B. Daniels..... 199,356
Syringe, B. F. Sutton..... 199,479
Truss, A. M. Dye..... 199,424

January 29th.

Amalgamator, ore, J. B. Le Clerc & M. A. Cachot 199,724
Bottle-stopper, F. W. Perry (R)..... 8,061
Bottling machine, stopper-fastening attachment for, J. G. Wolf..... 199,888
Carburetter, J. Bradley..... 199,781
Cork extractor, P. Tyrer..... 199,760
Crucible, metallurgic, W. L. Glorieux..... 199,823
Dental engine, W. G. A. Bonwill..... 199,779
Dental drill, C. Poor (R)..... 8,065
Gas, compound for producing illuminating, L. Marks..... 199,654
Medical powders, machine for putting up, W. E. Heeren..... 199,645
Medicinal agents, pad for external application of, E. H. Flagg..... 199,818
Ointment, C. J. Beattie..... 199,684
Saccharine matter from air, separating, E. K. Richards..... 199,864
Scale-platform, F. Fairbanks..... 199,811
Scales, weighing, C. Becker..... 199,776
Syringe, enema, M. Mattson..... 199,843
Vinegar generator, J. B. Netscher..... 199,854

ITEMS.

College of Pharmacy of the City of New York.—It affords us great pleasure to announce that the long-cherished wish of the college, to possess a building of its own, has at last been accomplished, mainly through the energetic efforts of the president, Mr. Ewen McIntyre ; the secretary, Mr. H. A. Cassebeer, Jr. ; and the other members of the property committee, Messrs. W. M. Olliffe, W. Neergaard, and A. W. Weismann. The new quarters will be located at Nos. 209–211 East 23d Street, two doors from Third Avenue, in one of the most accessible sites to be found in the city. The present building, formerly used as a church, will be immediately altered, so as to afford every facility for successfully teaching and studying all branches connected with the profession. The new building will contain two separate lecture-rooms, each capable of seating about three hundred students, and the laboratory will be so arranged as to accommodate a very large class. It is confidently expected that this new departure in the history of this time-honored institution will be the means of bringing about a still closer union of the best representatives of the profession, for the purpose of mutual instruction and improvement, as well as for the education of the rising generation of pharmacists.

The examinations of the graduating class were held on Feb. 28th, March 2d and 5th, and 49 candidates have successfully passed the ordeal. The commencement will take place at Chickering Hall, on Tuesday, March 19th, at 8 P.M., to which the members of the profession and the friends of the candidates are respectfully invited.

The annual meeting of the college will be held at the present lecture-rooms in the University Building, on Thursday, March 21st, at 8 P.M., when the officers for the ensuing year will be elected. This being the last meeting to be held within the walls which have sheltered the college for the last sixteen years, it is hoped that the attendance will be very numerous.

No interruption will take place in the summer course of instruction owing to the change of quarters, except, perhaps, a few days consumed in moving the fixtures of the laboratory. Until further notice, all business will be transacted at the present quarters.

The "Wood" Tariff Bill has been the subject of comment by a committee of the Western Wholesale Druggists' Association, as referred to in our Editorial Columns, and the following have been mentioned by them as some of the most prominent of its faults.

Crude Camphor (now free) is to be made dutiable at 3 cents per pound, while refined camphor is to be free.

As all the crude camphor comes here to be refined, and as no one could pay 3c. per pound on the crude and refine it to compete with *free* foreign refined, the result would be to deprive the Government of all revenue on the crude—as none would be imported—and to prevent all refining here.

On *opium* (now $1) the duty is to be $2 per pound, while morphia, laudanum, etc., are to be free. The consumption of opium is mainly in the manufacture of morphia by the chemist, and laudanum, etc., by the druggist.

With opium heavily dutiable and morphia free, the manufacture of morphia in this country would be at once suspended. We should have to import our laudanum and stop buying opium, and the Government would thus lose a large proportion of the $500,000 revenue anticipated from the duty on opium. The provision that henceforward "Opium deposited in bonded warehouses shall not be removed therefrom for exportation without payment of duties," and that "such duties shall not be refunded," needs no comment. It simply prohibits exporting to Cuba and South America, and throws an important business into foreign hands.

Argols are made dutiable 6 cents per pound ; *Argols*, crude, 3 cents per pound, while tartaric acid, Rochelle salts, and Seidlitz mixture are to be free. The result will be to stop the importation of Argol, required for these products, and hence to stop all revenue from them, and to ruin the manufacture in this country of tartaric acid, Rochelle salts and Seidlitz mixture.

Concentrated lime or lemon juice to be 10 per cent and citric acid free. Citric acid cannot be made here with juice dutiable ; hence not only the home manufacture will be stopped, but also Government revenue on the juice ; for none will be imported.*

Bismuth and *cadmium* are to be dutiable, their preparations free.

Saltpeter is to be dutiable, gunpowder free. The same reasoning applies here, and the Government and home manufacturer are to be made to suffer, in order to benefit the foreign manufacturer and his importing agencies.

Peruvian barks are to be taken from the free list and made dutiable 10 per cent, while the duty on *quinine* is reduced from 20 per cent to 10 per cent. Cinchonia, cinchonidia, quinidia, and chinoidine are to be made free. If bark remained free, some reduction in duty on quinine might be just and wise, but it would be a serious blow to an important home industry if bark was made dutiable, and the duty on quinine too largely reduced.

The alcohol used in the manufacture of cinchonia, etc., enumerated above, to be made free of duty, now pays a considerable revenue to the Government, which would be lost to it were the proposed change made. The present revenue of our Government on chemical products, in the manufacture of which alcohol is largely used, is estimated at one million dollars.†

Chloroform (now $1) could not be made here if foreign chloroform was made free, as proposed, for foreign manufacturers have free alcohol, and we have not.

Corkwood (now free) is to be dutiable at 30 per cent. This would at once destroy an important branch of American industry, and one of the greatest importance to the drug trade.

Linseed oil, one of the most important articles of American manufacture, both East and West, is to be 15 cents, as against 30 cents now, a direct blow at a large and important home interest.

Castor oil, another very important article (now $1 per gallon)—the castor bean being 50 cents per bushel—is to be free. This would most seriously injure, if it would not entirely destroy, one of the most important agricultural

* The present revenue is about $14,000 per annum.

† Chloroform alone is said to yield a revenue of $51,000 through the alcohol consumed.

and manufacturing interests of a large section of our country.

An objectional clause to the present tariff, placing a discriminating duty of 10 per cent, against all goods brought from east of the Cape of Good Hope, is retained.

Chloral.—The Chemical Society of London have appointed a committee to investigate certain effects of chloral hydrate, who have issued a circular containing the following questions, to which the committee will be pleased to receive answers:

"*Results of the Prolonged Use of Chloral.*—1. Age. 2. Sex. 3. Temperament, if marked. 4. Occupation (sedentary or otherwise). 5. Habits as regards stimulants. 6. For what purpose was the chloral given. 7. In what doses. 8. For how long, and whether continuously or with intervals of what duration. 9. If taken continually for a long period without obvious ill-effects. 10. If use followed by obvious ill-effects in reference to the—*a*, nervous; *b*, circulatory; *c*, digestive; *d*, cutaneous; *e*, urinary or other systems. 11. Any other further information, on any other head not tabulated, which your experience will afford."

Address Robert Farquharson, Honorary Secretary, Brook street, London, England.

Old Corks Made New.—Mohr recommends that the corks be collected and soaked in hot water. The following day they are washed repeatedly with pure water and soaked in a mixture of 15 parts of hot water and 1 part of hydrochloric acid. After a few hours they are taken out of this bath, washed well and dried; they then exhibit the appearance of new cork.—*Dingl. Polyt. J.*

Adulteration of Santonin, according to M. Cotton, may be detected by igniting the substance, dissolving the residue in boiling-water, and allowing it to crystallize, when boric acid separates, recognizable in the usual manner.

Professor Ranieri Bellini, late Professor of Toxicology and Forensic Medicine in the Royal Institute of Florence, committed suicide by poisoning on the 12th of January. Dr. Bellini was sixty years of age, and was highly esteemed as a teacher. He had made numerous investigations of the actions of poisons, and in *Lo Sperimentale* for 1876 published a series of observations on this subject. In conjunction with Dr. Fillipi, he was the author of a *Biblioteca Medico-legale*, just completed in three volumes.

The Institute of Chemistry is the name of a newly organized association in Great Britain, Professor Frankland, F.R.S., being the president. At the first meeting the chairman remarked the fact that, under the Pharmacy Act of 1868, no one, not even the president of the Chemical Society, may call himself a chemist unless he is duly registered as a pharmaceutical chemist. The institute has already 225 members, 7,142 associates, and a fund of over $5,000.

Phosphorus Paste.—A correspondent of the Chicago *Pharmacist* recommends the following formula, which he says is an improvement of that given by Mr. R. Rother:

Starch	4 ozs.
Flour	12 "
Glycerine	12 "
Water	½ pint.
Phosphorus	1 oz.

Upon the unpulverized starch, placed in a convenient vessel, pour ½ pint of water, stir up the mixture, and pass it through a No. 60 sieve into a cast-iron enamelled kettle having the capacity of a gallon or more; add 12 ozs. of water, then the flour, and mix thoroughly, and apply heat by means of a sand-bath, until the plasma begins to form, stirring in the mean while constantly with a suitable pestle; then take the vessel from the fire, and stir as before, while the plasma forms, so as to evenly divide it; after a few minutes reapply heat, stirring briskly until the plasma has completely formed, and then set it aside to cool, stirring it occasionally. Now place 1 oz. of phosphorus, in stick, into a glass-stoppered bottle (wide mouth) containing 12 ozs. of glycerine, by weight, place the bottle into a water-bath, apply a gentle heat, and shake often and quick, when the phosphorus will be completely divided through the liquid. Take a portion of the plasma, mix it gradually with 4 ozs. of water, and add about one-fourth of the mixture of phosphorus and glycerine (shake well before adding) at a time, until the whole is thoroughly mixed, which should be done very quickly and in the open air, the operator being careful to tie a cloth around his mouth and nose, so as not to inhale too much of the fumes that arise. The result will be a fine smooth paste, in which the phosphorus is evenly divided. It should be immediately bottled in small wide-mouth bottles. Such as morphine bottles answer very well, of which pharmacists always have more or less on hand. The above preparation can be made for about ⅛ the cost of the so-called Costar's Rat Poison.

Killing Cattle by Dynamite.—The London butchers have made experiments with dynamite, for killing cattle. 30 grs. contained in a bag are suspended by a string from the horns of a steer, for instance, so that the charge rests upon the forehead, and then exploded. The effect was in every case complete and well localized, a deep hole being rent into the forehead, and the brain being completely destroyed. It is proposed to give this mode of butchering a further and more extended trial, in which case we can only trust that the number of eventually exploded butchers will be moderate.

To make Labels adhere to Tin.—Rich. Schuster recommends to add to about ½ pint of the paste 20 drops of so-called butter of antimony (concentrated solution of antimonious chloride). The antimony is deposited in a metallic state upon the tin, and forms a surface to which the paste easily adheres. Cupric chloride may also be used for the same purpose. Of course, both of these additions are poisonous, and the necessary care must be taken in their employment.

Regnault (Henri Victor), born July 21st, 1810, at Aix-la-Chapelle, died Jan. 20th, 1878, at Auteuil. He was director of the celebrated porcelain manufactory at Sèvres, professor of chemistry, and was well known by his researches both in chemistry as in physics.

Molecular Dimensions.—Maxwell and S. Tolver Preston deduce from a series of researches the conclusion that one cubic-centimetre of air (a space occupied by about 16.3 minims) contains nineteen millions of billions = 19×10^{18} molecules, or 1,900,000,000,000,000,000.

Eucalyptus Elixir.—The following is a specification of a French patent for a new Eucalyptus liqueur, invented by M. Rantien:—Infuse, for a fortnight, 400 grammes of leaves of Eucalyptus globulus in 1,000 c.c. alcohol 96°. In another 1,000 c.c. alcohol 95°, infuse for a fortnight the following:—Balm, 6 grammes; angelica, hyssop, English peppermint, and canella, of each 2 grammes; nutmeg, clove, and vanilla, of each 1 gramme. Thirdly, make a syrup with sugar, 1 kil. water 1.125 grammes. Add to the cold syrup 800 grammes of infusion No. 2, and a few days later filter. Then add 300 grammes of No. 1 infusion, and after skimming, filter again and bottle.

Adulterated Sulphate of Quinia.—A pharmacist of this city reports to us that he has found cinchonia in a lot of muriate of quinia of American manufacture, purchased in a loose state from a wholesale house in New York.

Solution of Hydrochlorate of Calcium Phosphate.—A solution prescribed usually as "Sol. Hydrochlor. Phos. Calc.," is often called for, which is directed to be prepared as follows:

Calcium phosphate, precip. ..... 2 ℥.

Mix with water, and dissolve with hydrochloric acid; precipitate by water of ammonia; wash the precipitated gelatinous phosphate until free from ammonium chloride and free ammonia; then redissolve it in water by the aid of

Hydrochloric acid ..... 2 ℥,

and add enough water to make the whole measure 24 fl. ℥.